

***TWZOOM85***

**FCA17001**

***TWZOOM85*** QUARTZ DATE

**FCA17201**

***ZoomTouch600***

**FCA17101**

***ZoomTouch600*** QUARTZ DATE

**FCA17301**

**REPAIR MANUAL**

***Nikon*** | **NIKON CORPORATION**  
Tokyo, Japan

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## SPECIFICATIONS

See the instruction manual

## 1 Outline

## Main features

A full-automatic lens shutter camera with zoom optics:

- ① Motor-driven electric zoom system with 2.5X zoom ratio (32~85/F4.4~ F10.9)
- ② Lens protection cover
- ③ Real-image viewfinder and zoom flash
- ④ 3-mode zooming: Continuous zoom; continuous zoom shooting and image-size selector.
- ⑤ Close-up to 0.65m with whole focal distance
- ⑥ Forced infinity driving
- ⑦ Spot AF
- ⑧ Frame skip function
- ⑨ Flash pre-firing mode
- ⑩ Automatic backlight compensation and automatic flash-firing in low brightness.
- ⑪ Panorama mode

## 2 Specifications

Picture format	Normal:	24mm × 36mm
	Panorama:	13.3mm × 36mm

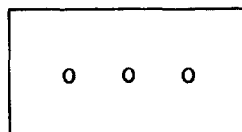
- Lens
- (1) Lens construction: 10 elements in 8 groups (2.5 × zoom ratio)
  - (2) Focal distance: W:32mm ~T:85mm (nominal value)
  - (3) F-number: W:F4.5 ~T:F10.9
  - (4) Shooting distance: 0.65 m (0.7m Flash cancel) ~∞ (in the entire zoom range)
  - (5) T/W mode selection time: Approx. 2 sec.

## Autofocus

- (1)Type: Electrical triangle focusing by active method
- (2)Mode:
  - ①Carefree autofocus mode
  - ②Spot autofocua mode
  - ③Infinity focus mode
  - ④Image-size select
- (3)Focusing range: 0.65 ~∞
- (4)Autofocus lock: By depressing shutter release button

# FCA17001-R. 3316. A

- (5)Too-close warning: 0.65m (Flash-fired), 0.7m (Flash cancel) Green LED lights up.
- (6)Too-far-warning: 5.8m (ISO 64 ~200), 8.8m(400~3200) Green LED lights up.
- (7)Number of steps: 28 Steps
- (8)Position of IRED beam



## Exposure control

- (1)Shutter Electro-magnetic programmed shutter also serves as diaphragm blade.
- (2)Metering Measures center and periphery separately.  
Center: Condensing lens + Cds cell  
Periphery: Cds cell
- (3)Auto-exposure range W: EV6~EV14.75  
(ISO 100) T: EV7~EV17.0
- (4)Exposure compensation Exposure compensation from +2.0EV to -2.0EV.
- (5)Auto exposure delay AUTO 1/45 sec  
PTS 1/45 sec  
Forced firing 1/45 sec  
SLOW 1/4 sec  
Firing pro-hibition Max 1 sec

- Viewfinder (1)Type Mirror-reflex real-image viewfinder
- (2)Ratio of viewfield

	Full-size		Panorama-size	
	Vertically	Horizontally	Vertically	Horizontally
W	83%	83%	73%	83%
T	87%	84.1%	90%	84.1%

- (3)Diopter -1DP;/0.5DP selectable

- Speedlight: (1)Type Automatic zoom flash
- (2)Mode AUTO  
Firing pro-hibition  
Forced firing  
Auto flash with red-eye reduction  
Slow synchro

**FCA 17001-R. 3316. A**

- [illegible]

**Self-timer**

(1) Mode                  2 modes can be set by self-timer button

(2) Delay time

- In one-shot operation 10sec.:  
    (for 7 sec. the indicator lamp lights up and for 3 sec. it blinks.)
- In two-shot operation  
    the 1st shot: Same in one-shot operation  
    the 2nd shot (AE): 5 sec. after the first shot (for 2 sec. the indicator lamp lights up and for 3 sec. it blinks.)  
    the 2nd shot (SB): 6 sec. after the first shot (for 3 sec. the indicator lamp lights up and for 3 sec. it blinks.)

Film advance	(1)Method	Electric spool-drive system
	(2)Film advance speed	Approx. / 0.8 sec./frame
	(3)Auto film rewind	Film rewinding automatically starts when free sprocket signal is not input approx. 2.4 sec. or after taking 37th frame.

Power source 6V lithium battery pack (Panasonic CR-P2 or Duracell 223A)

Dimensions:  
Weight:

Item	Dimensions	Weight (without Battery)
TW Zoom85	148×78×68	460
TW Zoom85 QD	148×78×70.5	470

## View finder internal LED indication

	Red LED	Green LED
Lights up	Ready to fire	Subject is in focus or infinity focus
Blinks	Specially blinks(4Hz) Flash is insufficient-ly charged PTS ready	Too-close-warning (4Hz) Too-far-warning (4Hz) Disabled focusing warning (8Hz)
Lights up	Does not light up	Insufficient battery power

## Display timer

Display disappears in 3 sec.  
Lens barrel returns to 32 mm position.

## Frame skipping

Manual mode: Frame number to be skipped is set manually.

Auto mode: Film is skipped automatically to the programmed frame if the following conditions are satisfied.

## DISASSEMBLING

### 1. Disassembling to rear body and lens barrel unit

Bottom cover	D 1
Rear cover	D 1
Camera back	D 2
Front cover	D 2
Discharging of the main condenser	D 2
AF unit	D 3
Viewfinder group	D 4
Flash base plate unit, amp base plate unit	D 5
Removing lens barrel unit	D 6

### 2. Rear body

Connecting FPC	D 7
W / R gear group	D 7

### 3. Lens helicoid

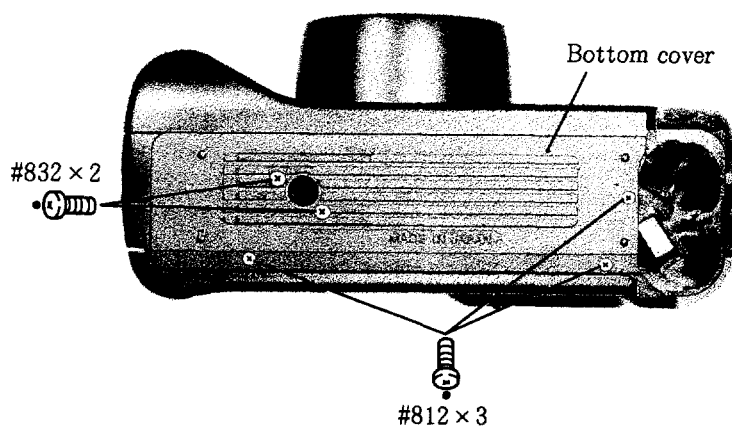
Retaining ring	D 8
Helicoid motor unit, joint gear group	D 8
Helicoid SW	D 9
Linear key, clutch	D 9
Lens barrel group	D 9
Lens cover unit	D10
Guide tube unit	D10
3rd lens group unit	D11
3rd cam ring, lens cover shaft	D11
Shutter unit	D12
1st lens group unit	D12

## DISASSEMBLING

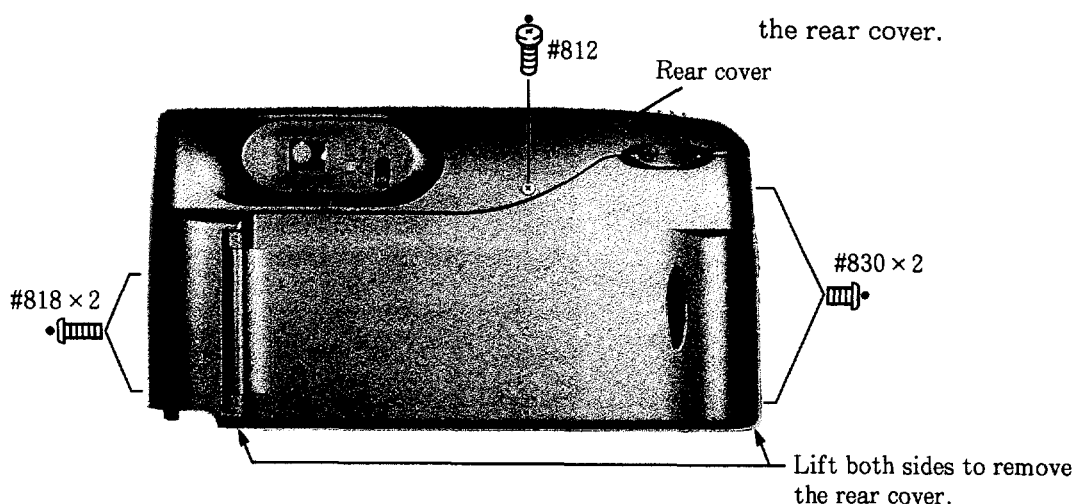
- Note :**
- ① Remove batteries before disassembling.
  - ② When disassembling, pay attention to the wire arrangement and mounting positions and types of screws to be removed.
  - ③ Be sure you are grounded when holding main FPC because static electricity exerts serious adverse effects on ICs.
  - ④ The “●” mark on the screws indicates they are tap-tight screws.
  - ⑤ The tone of pictures may be different from actual one. Make sure of the shape of parts when disassembling and reassembling.
  - ⑥ When removing gears, make sure to distinguish the front and back sides.

### 1 . DISASSEMBLING TO REAR BODY AND LENS BARREL UNIT

#### BOTTOM COVER

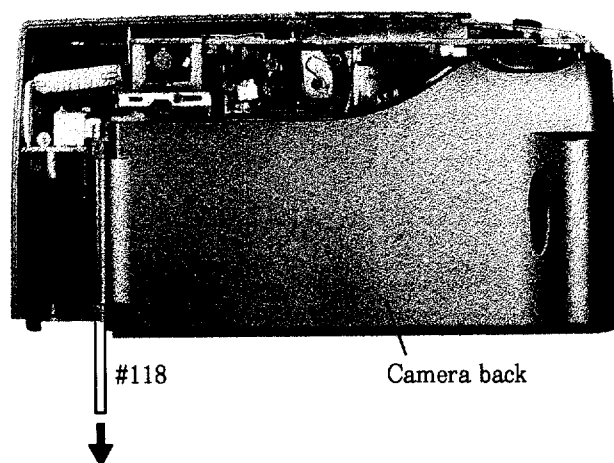


#### REAR COVER



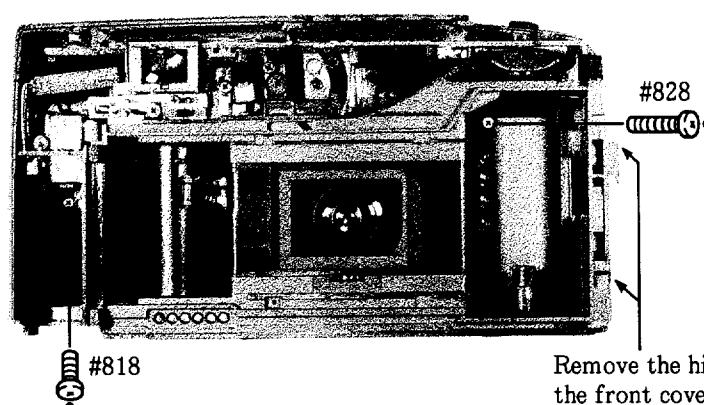
**Note:** Be careful not to bend the power SW brush when removing the rear cover.

# CAMERA BACK



- Pull out the back door shaft #118 to remove the back door.

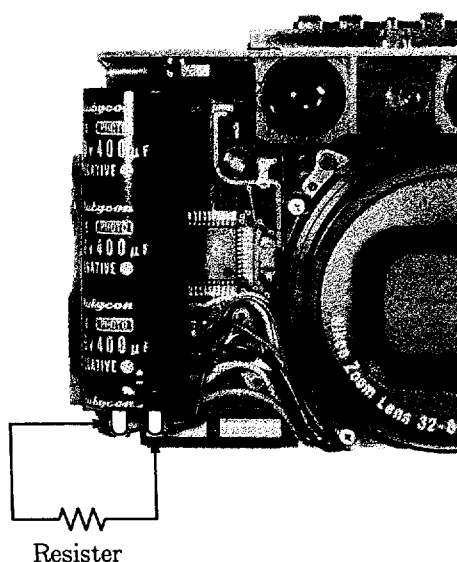
# FRONT COVER



- When removing the front cover, the shutter release button and light-baffle ring are simultaneously removed.

Remove the hinged two portions between the front cover and the body.

# DISCHARGING OF THE MAIN CONDENSER

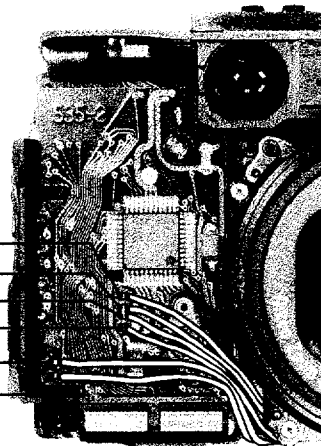


- Discharge the main condenser it the both sides.
- Use 2K $\Omega$  / 5W resister to discharged.

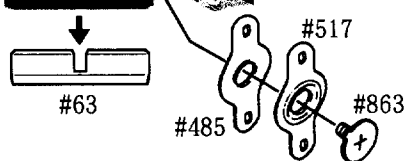
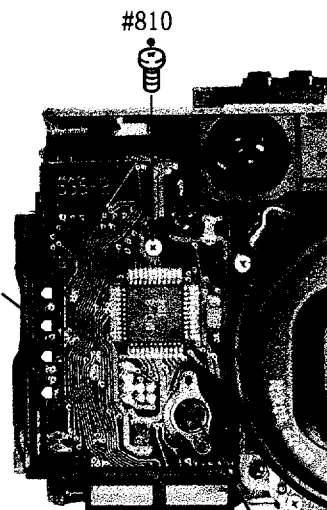


## AF UNIT

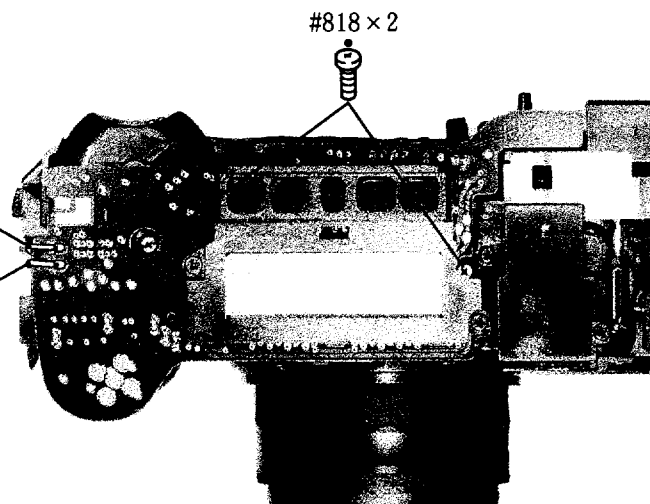
Yellow: Film advance motor  
 Pink: Helicoid motor  
 green: Film advance motor  
 Blue: Helicoid motor  
 White: Battery contact (-)  
 Orange: Battery contact (+)



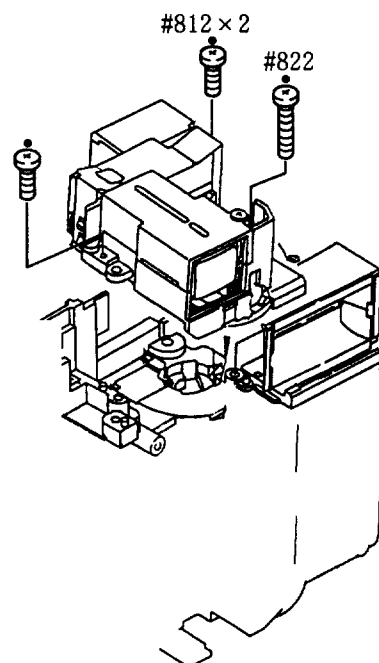
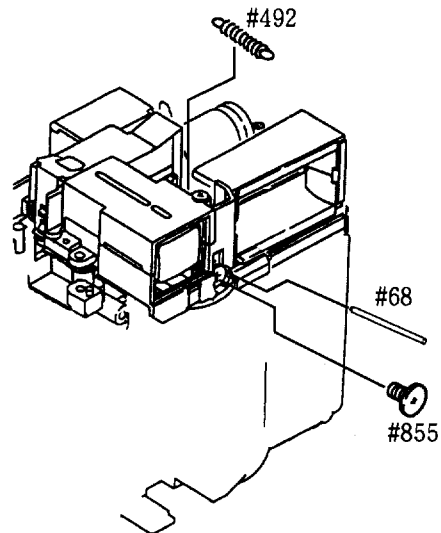
Remove soldering bridges between the MD base plate and the DX contacts.



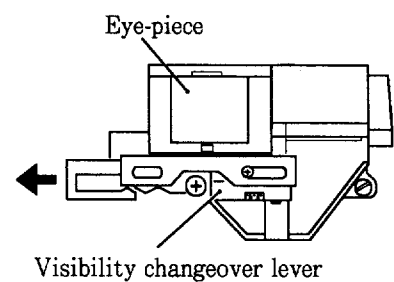
Brown: Free sprocket SW  
 Green: Free sprocket SW



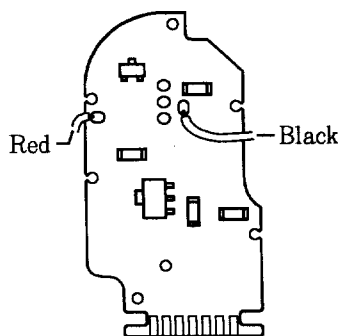
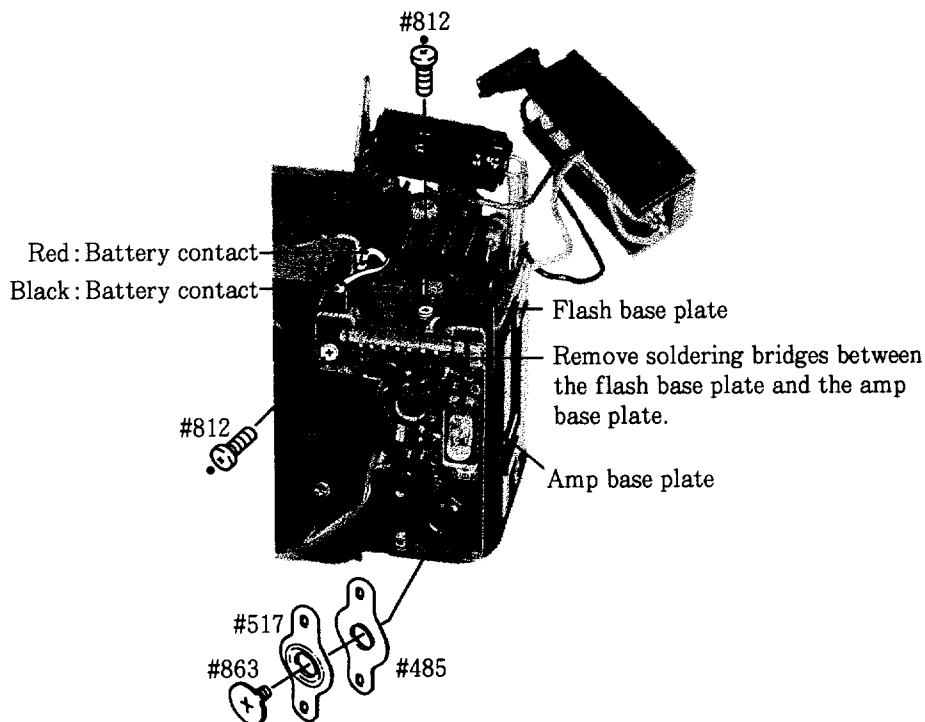
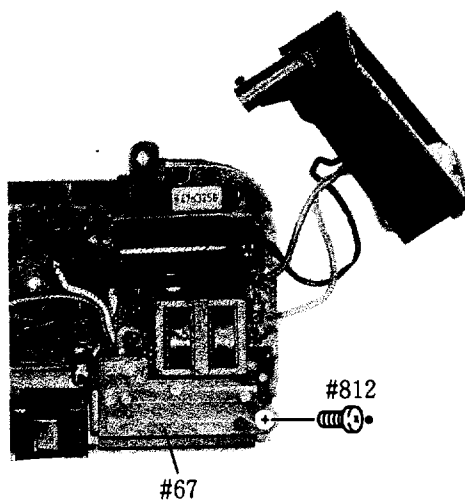
## VIEWFINDER GROUP



**Reference:** The viewfinder unit can easily be removed when the visibility changeover lever is at the position —1DP. (See the figure below.)

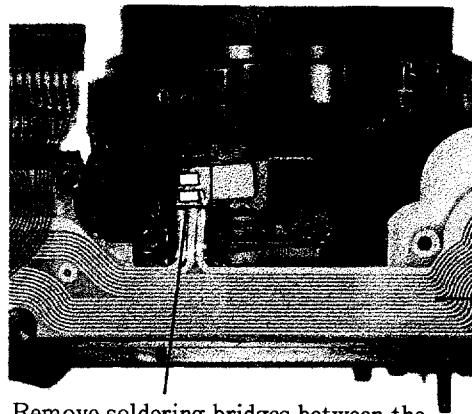


FLASH BASE PLATE UNIT, AMP BASE PLATE UNIT



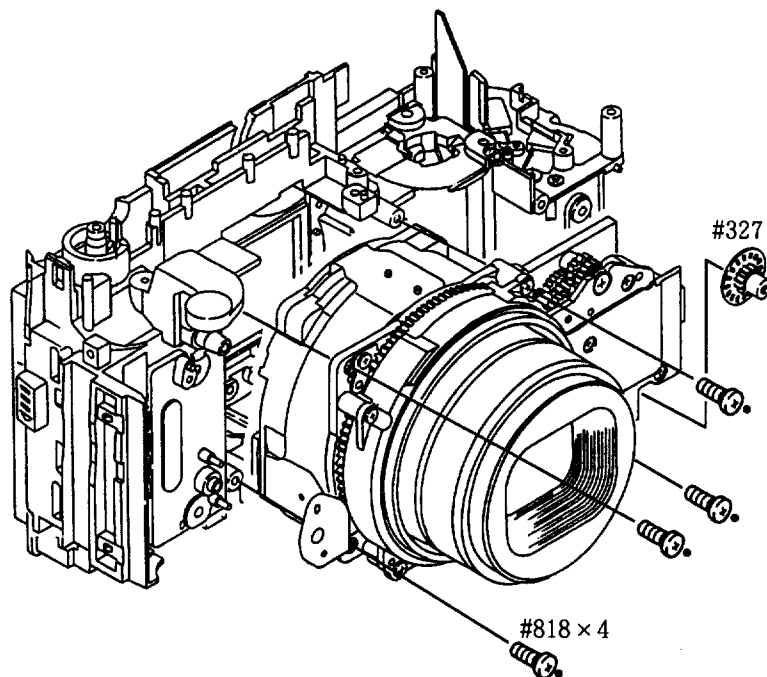
(Rear side for flash base plate)

## REMOVING LENS BARREL UNIT



Connecting FPC

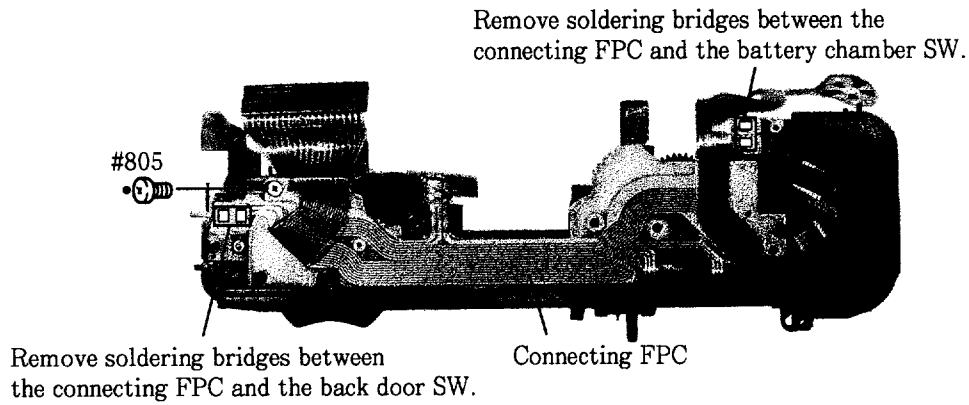
Remove soldering bridges between the helicoid SW and the connecting FPC.



- Remove lens barrel unit while being careful about wires and connecting FPC.

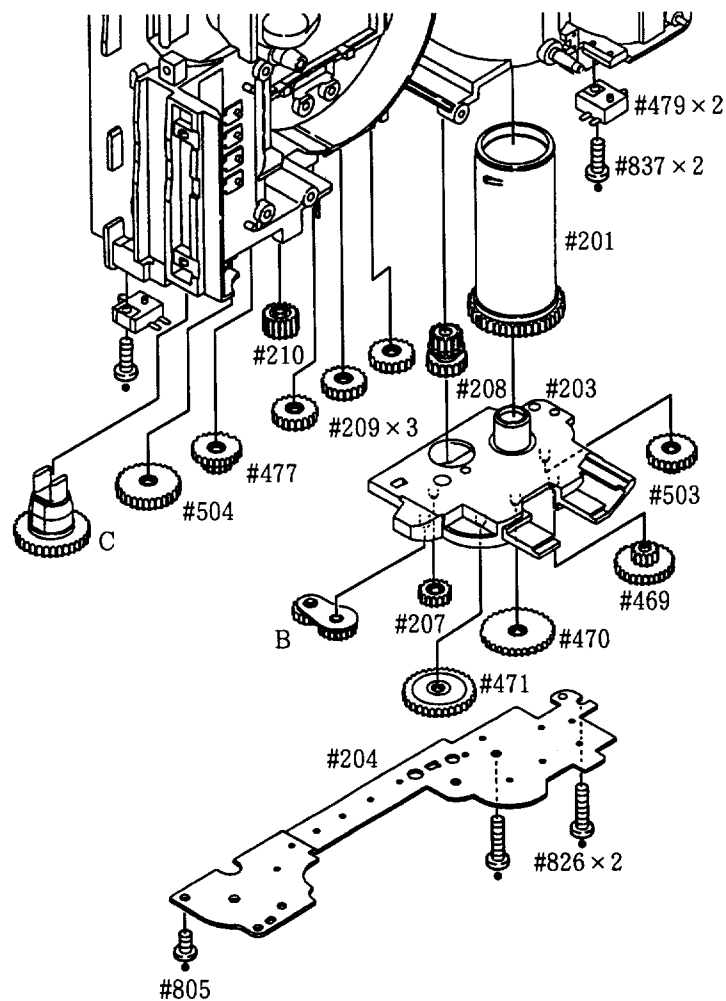
## 2. REAR BODY

### CONNECTING FPC



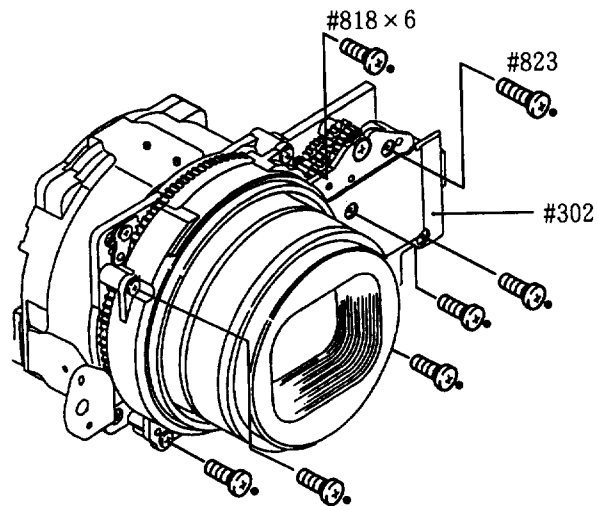
**Note:** Take care not to damage the connecting FPC by peeling it off forcibly, because it is attached with double-coated adhesive tape.

### W/R GEAR GROUP

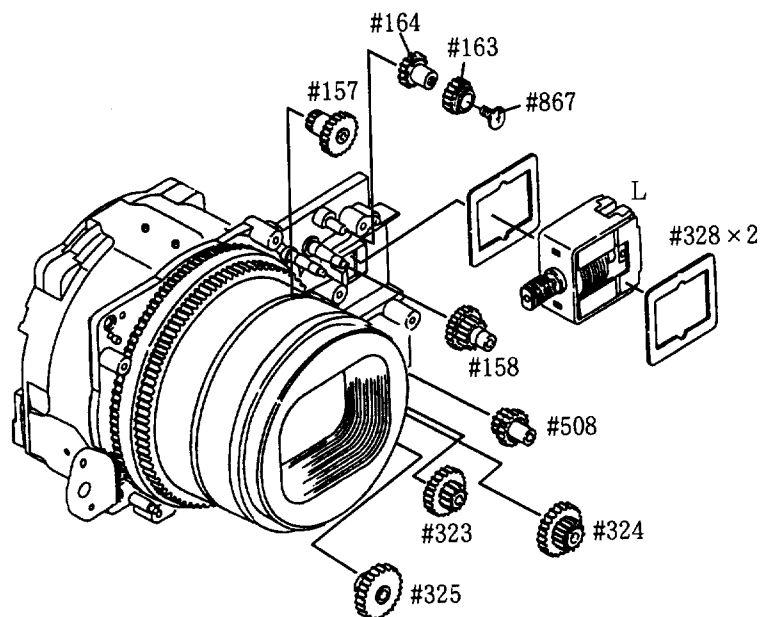


### 3. LENS HELICOID

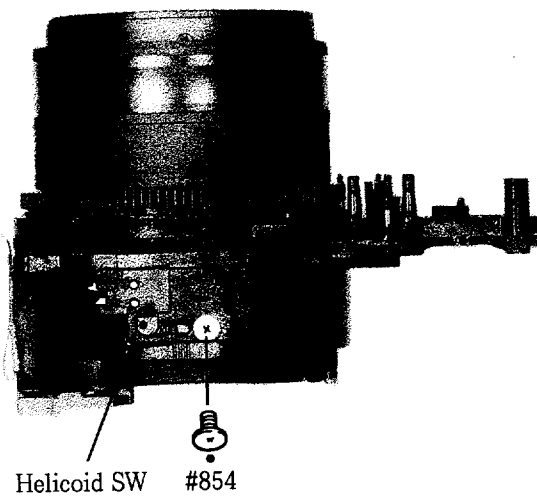
RETAINING RING #302



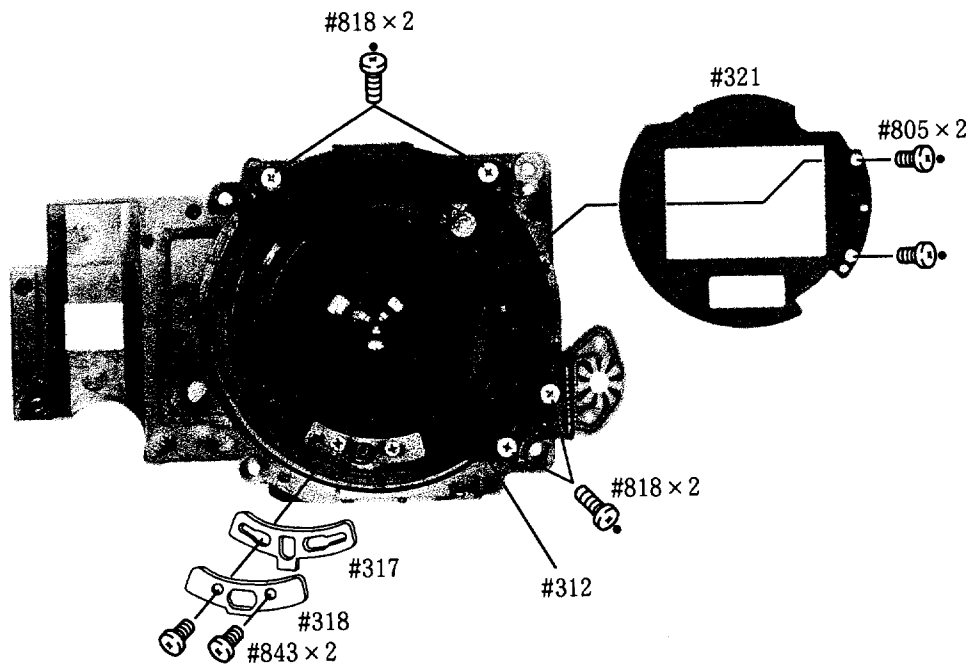
HELICOID MOTOR UNIT, JOINT GEAR GROUP



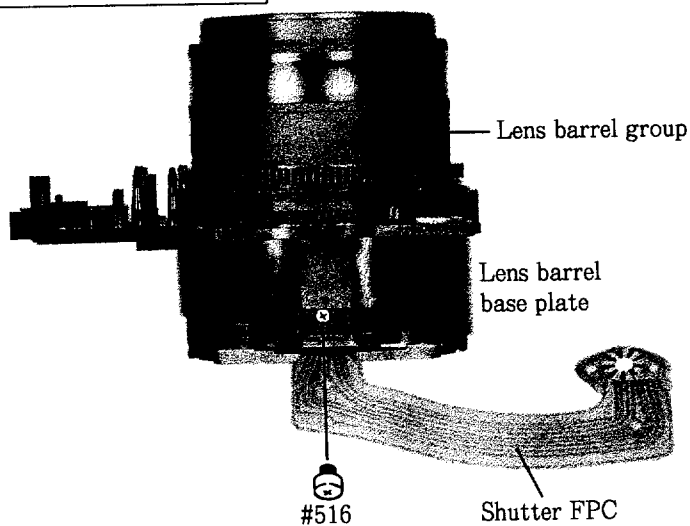
# HELICOID SW



# LINEAR KEY #312, #313, CLUTCH #317

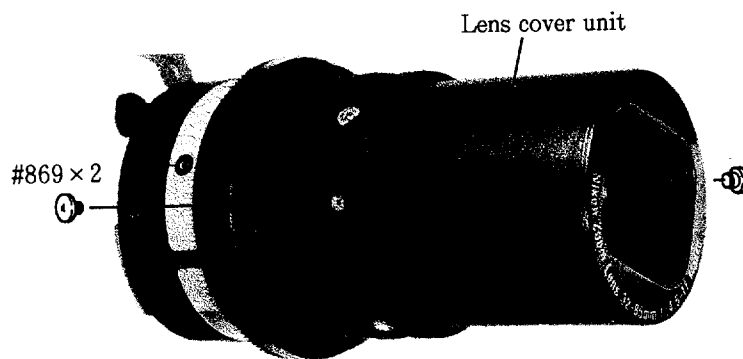
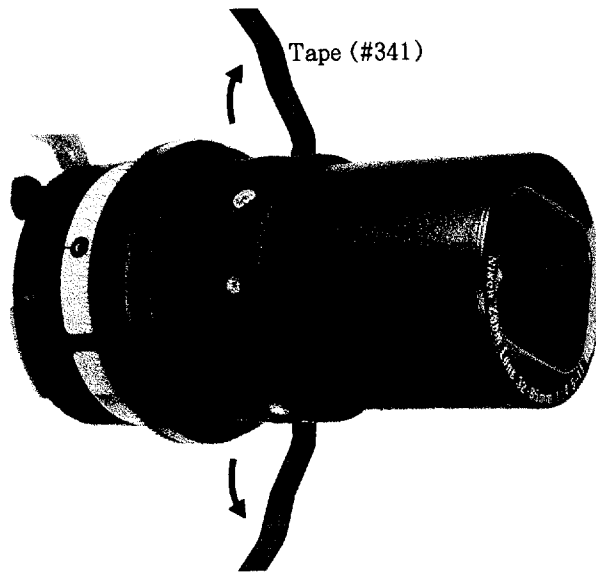


# LENS BARREL GROUP

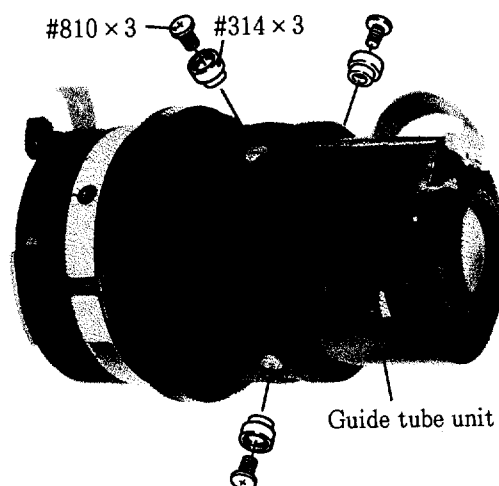


Peel off the lens barrel base plate from the shutter FPC and unfasten screw #516. And separate the lens barrel group from the lens barrel base plate.

LENS COVER UNIT

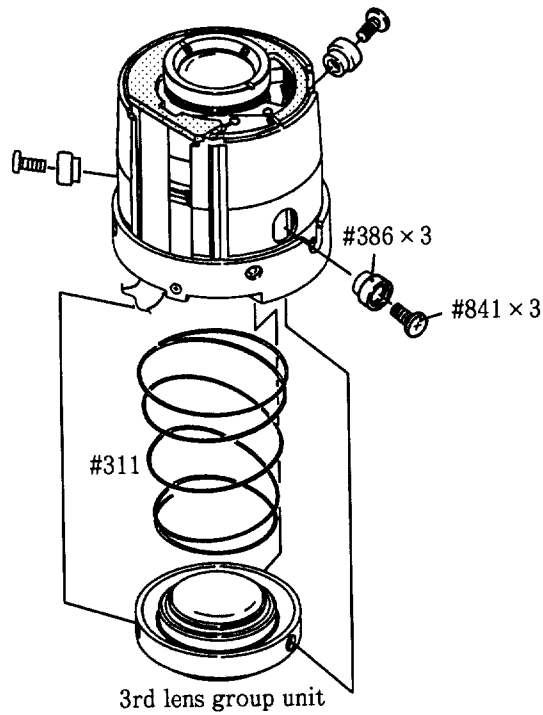


GUIDE TUBE UNIT

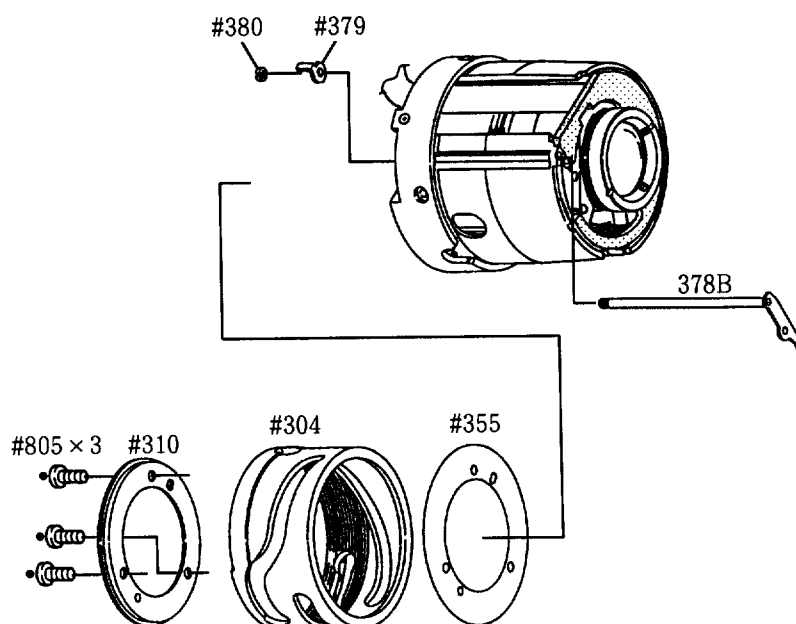




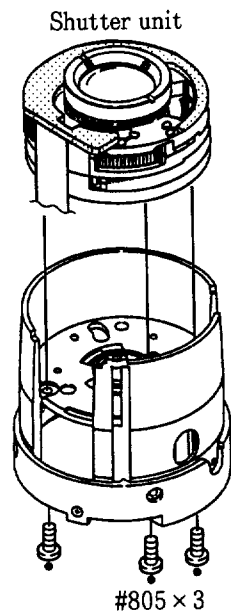
3rd LENS GROUP UNIT



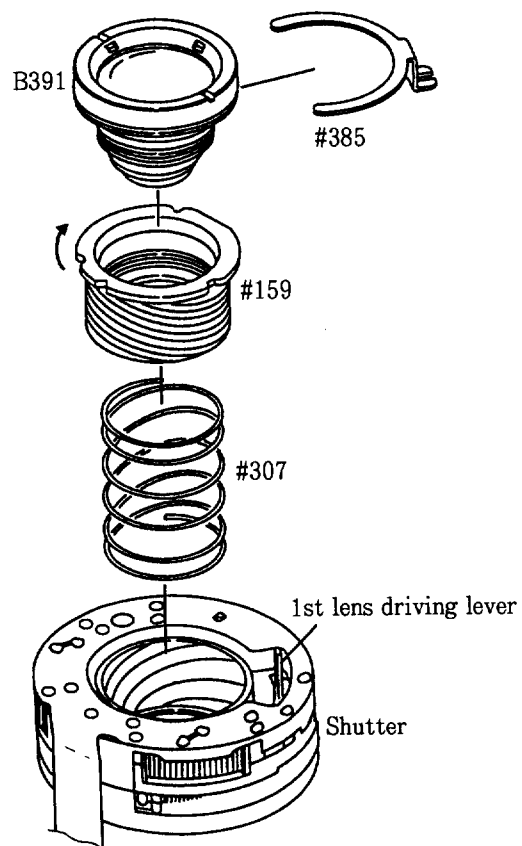
3rd CAM RING #304, LENS COVER SHAFT 378B



## SHUTTER UNIT



## 1st LENS GROUP UNIT



- Remove adhesive agent on focus ring #385 and 1st lens group unit to make the 1st lens group free.

- Secure focus ring #385 and rotate #159 and B391 together clockwise to remove.

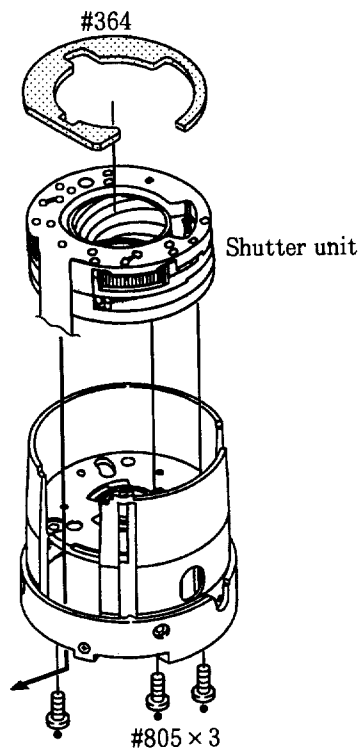
**Note:** When separating focus ring #385 from the 1st lens driving lever, do not bend the fork of focus ring #385 inward.

## ASSEMBLING / ADJUSTMENT

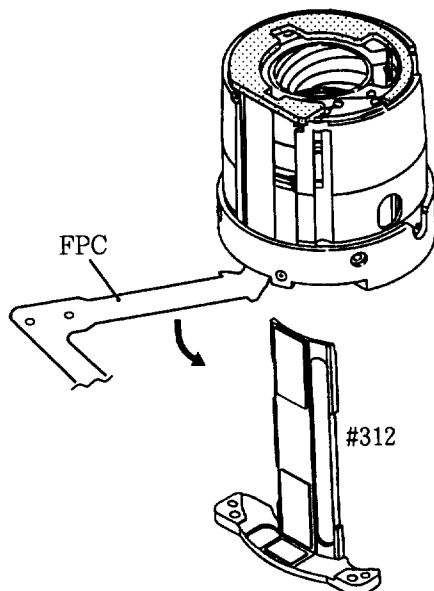
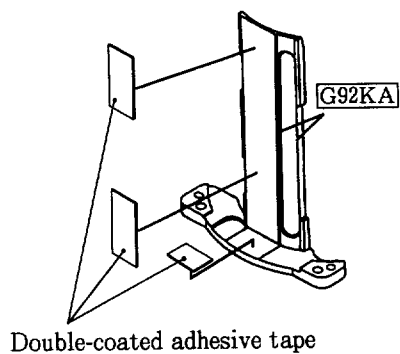
Shutter unit	A 1
Shutter FPC	A 1
3rd cam ring, lens cover shaft	A 2
3rd lens group unit	A 2
Outer cam ring unit	A 3
Guide tube unit	A 3
Lens barrel group	A 4
Linear key, clutch	A 5
Helicoid SW	A 5
Helicoid motor unit, joint gear group	A 6
Retainig ring	A 6
W/R motor group, panorama lever unit, small parts of rear body	A 7
W/R gear group	A 8
Connecting FPC	A 9
Aligning of rear body and lens barrel unit	A10
Flash base plate unit, amp base plate unit	A11
Viewfinder group	A12
AF unit	A13
Main condenser	A14
Camera back	A14
Adjustment viewfinder cam position	A15
1st lens group unit	A15
Adjustment of back focus	A16
Adjustment at both ends of focal length	A17
Adjusement of shift	A18
Lens cover unit	A19
Press-contact between the connecting FPC and the amp base plate	A20
Front cover	A20
Rear cover	A21
Bottom cover	A21

# ASSEMBLING / ADJUSTMENT

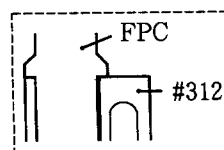
## SHUTTER UNIT



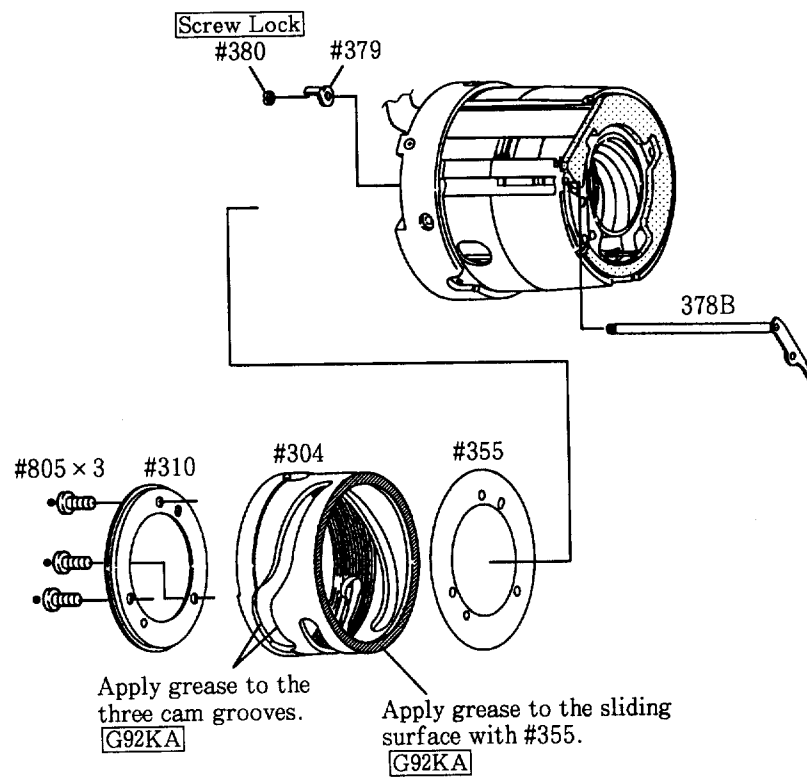
## SHUTTER FPC



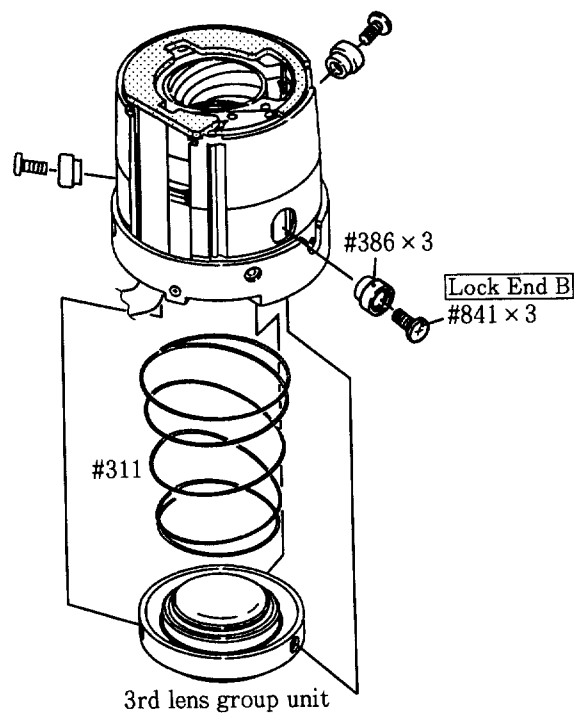
**Note:** In sticking the FPC  
Stick it at the position  
shown by the below figure.



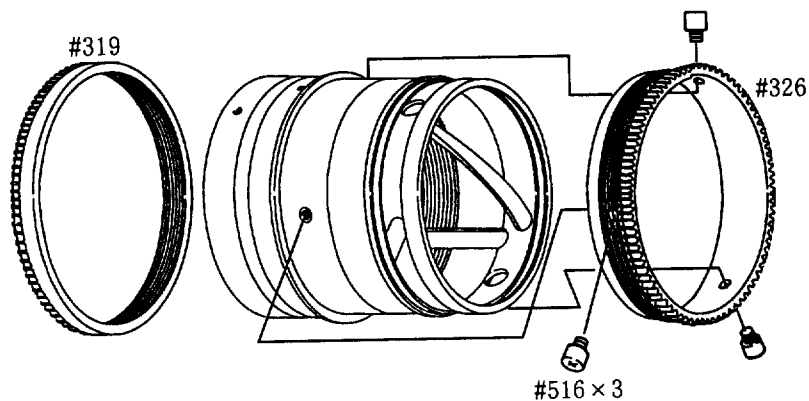
## 3rd CAM RING #304, LENS COVER SHAFT 378B



## 3rd LENS GROUP UNIT

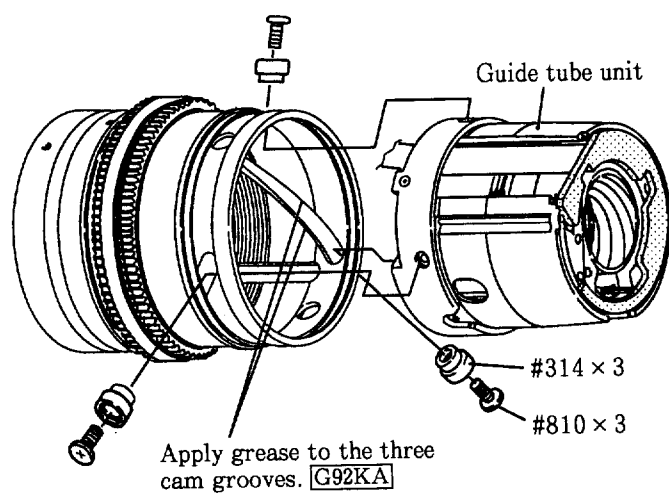


# OUTER CAM RING UNIT

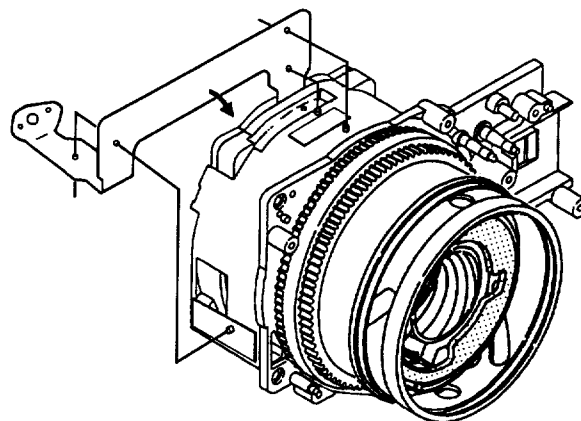
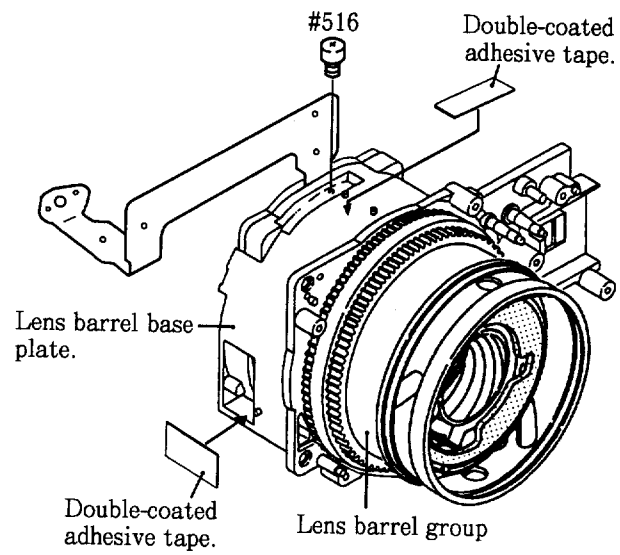


- ① Attach the #326 with screws #516 × 3.
- ② Screw down the sift-ring #319. (It is the position returned one rotate-half from the position it was screwed down)

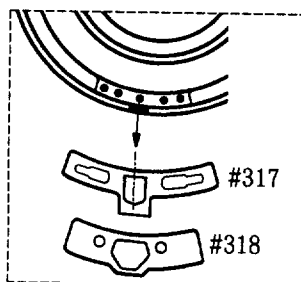
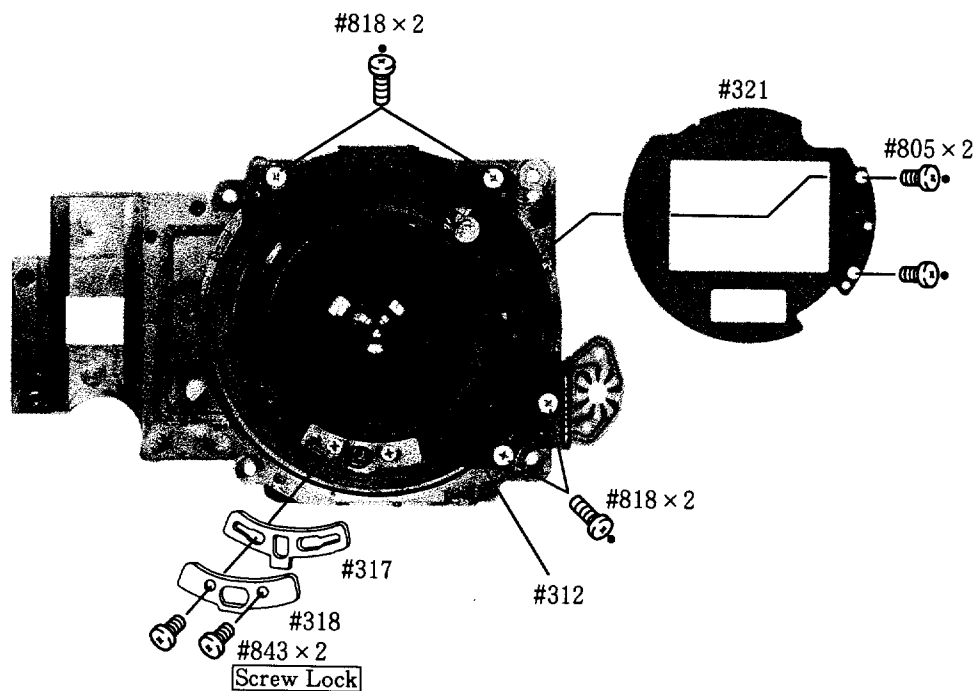
# GUIDE TUBE UNIT



LENS BARREL GROUP

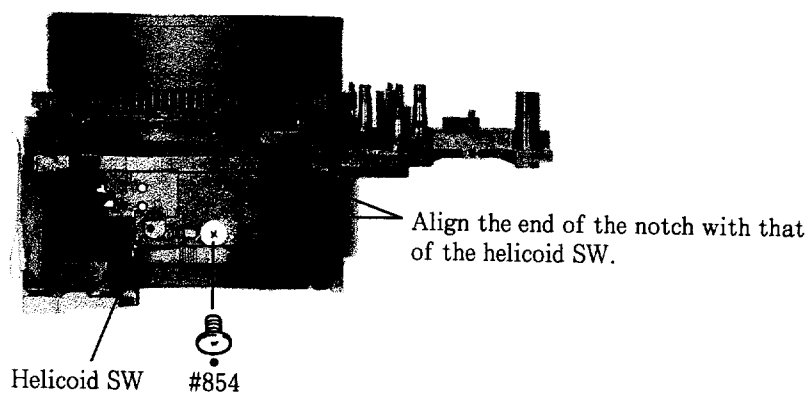


LINEAR KEY #312, #313, CLUTCH #317



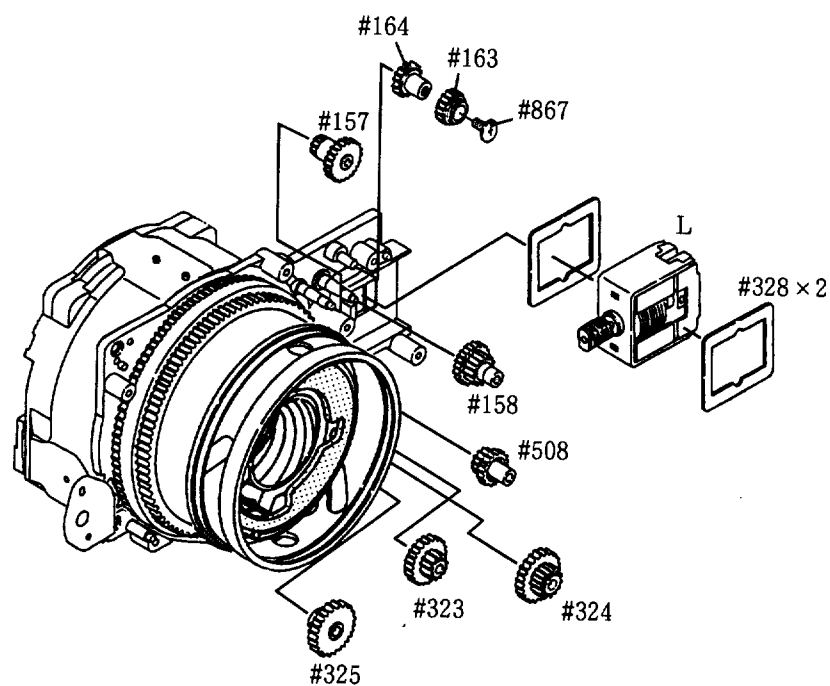
- When the clutch #317 and #318 are attached, connect the middle hole with the center of #317 as shown by the left figure.

HELICOID SW



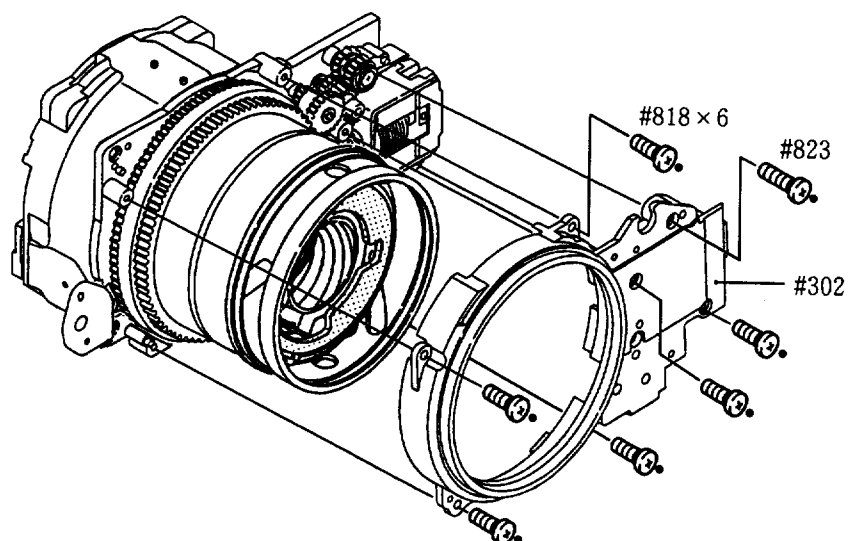


# HELICOID MOTOR UNIT, JOINT GEAR GROUP

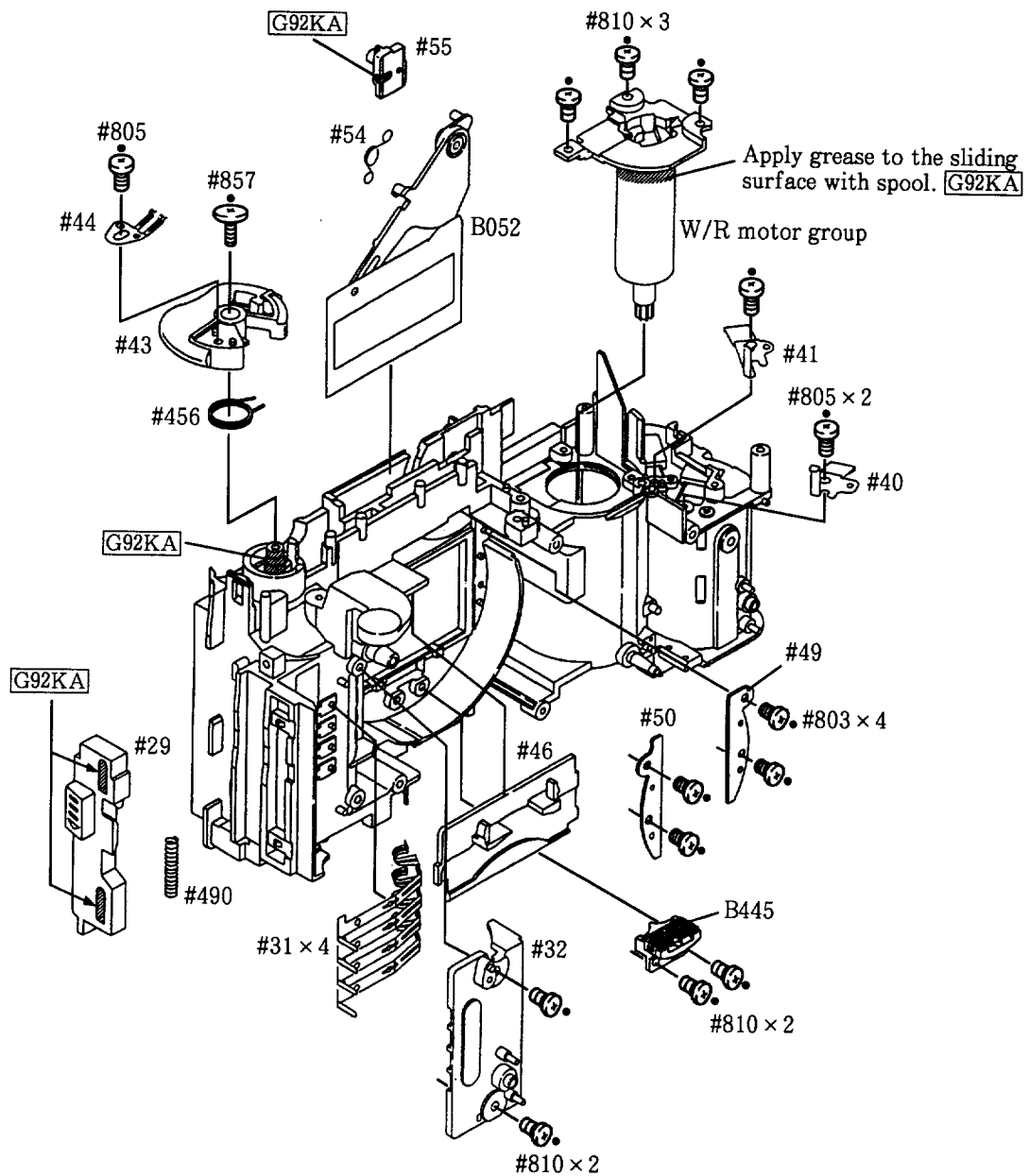


- Apply slightly grease G92KA to each gear and gear shaft.

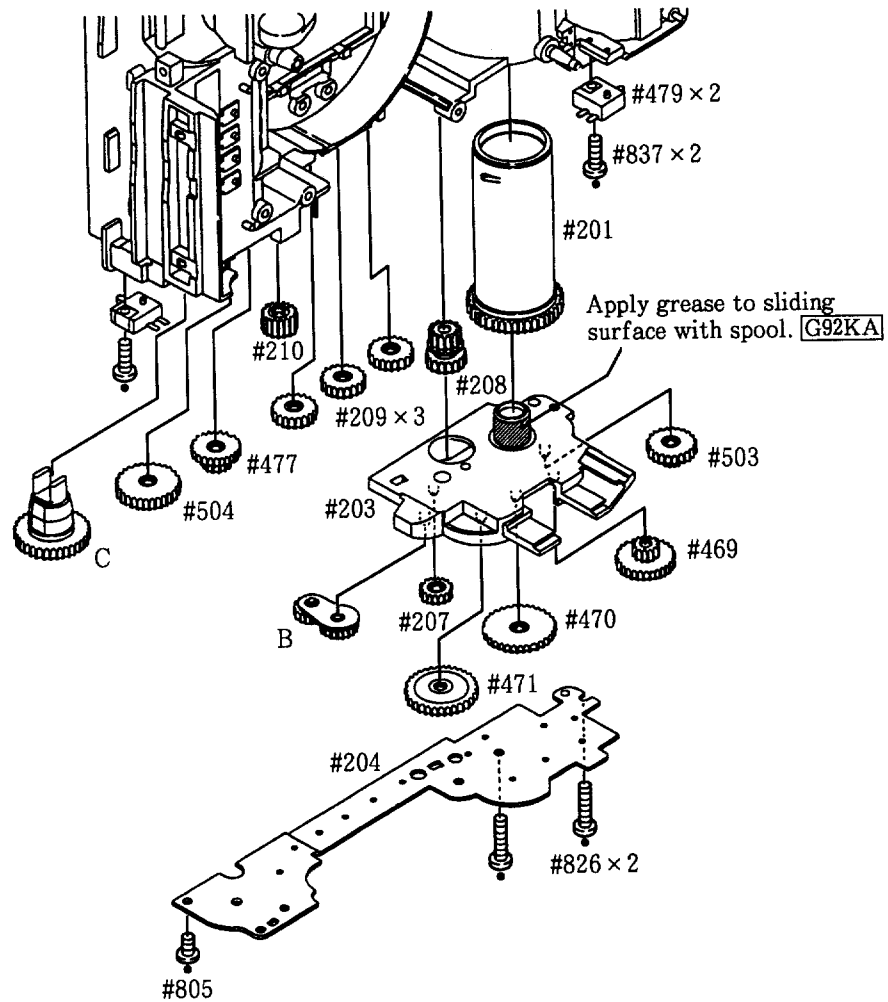
## RETAINING RING #302



## W/R MOTOR GROUP, PANORAMA LEVER UNIT, SMALL PARTS OF REAR BODY

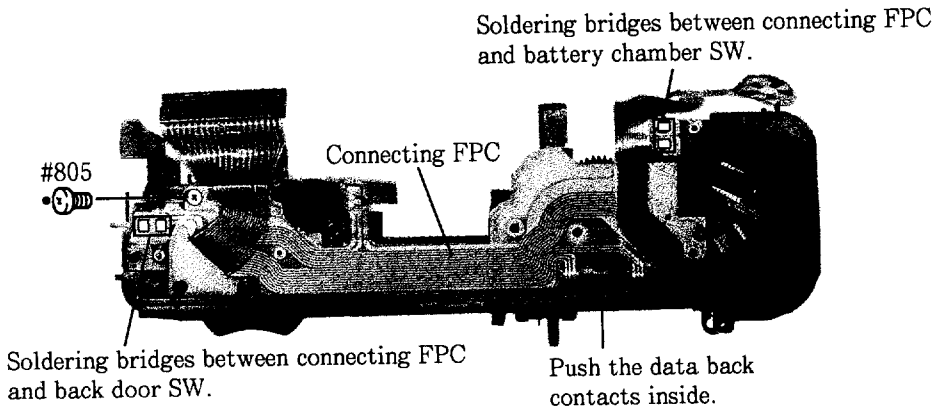
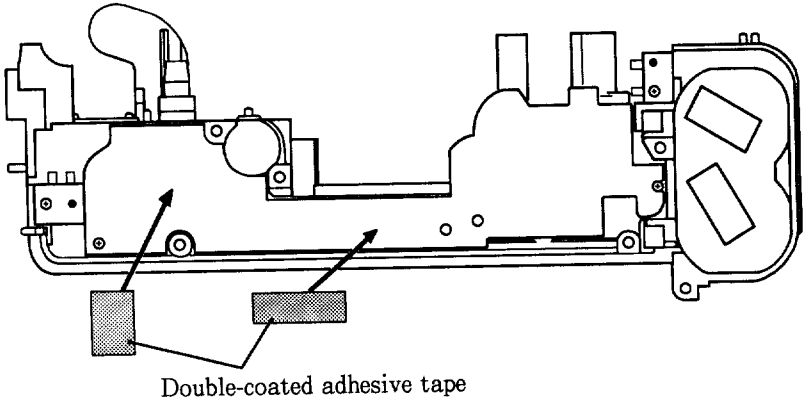
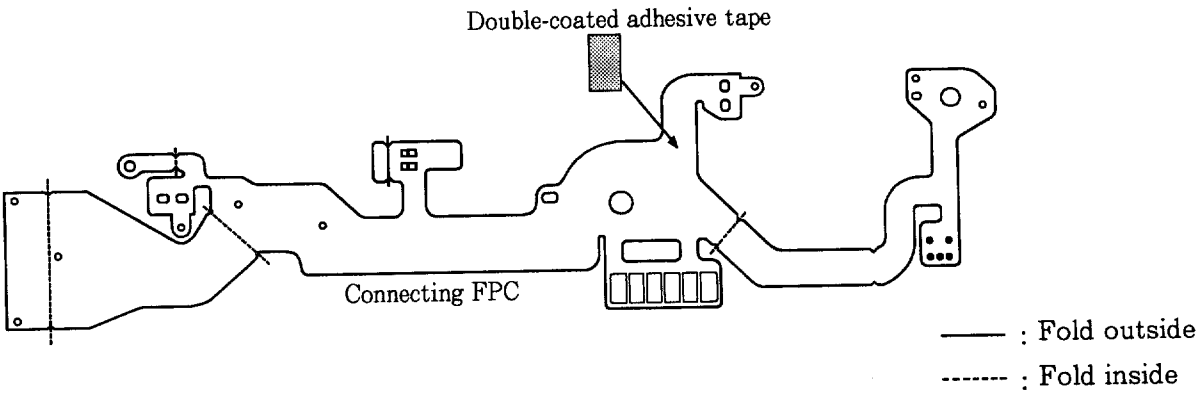


## W/R GEAR GROUP

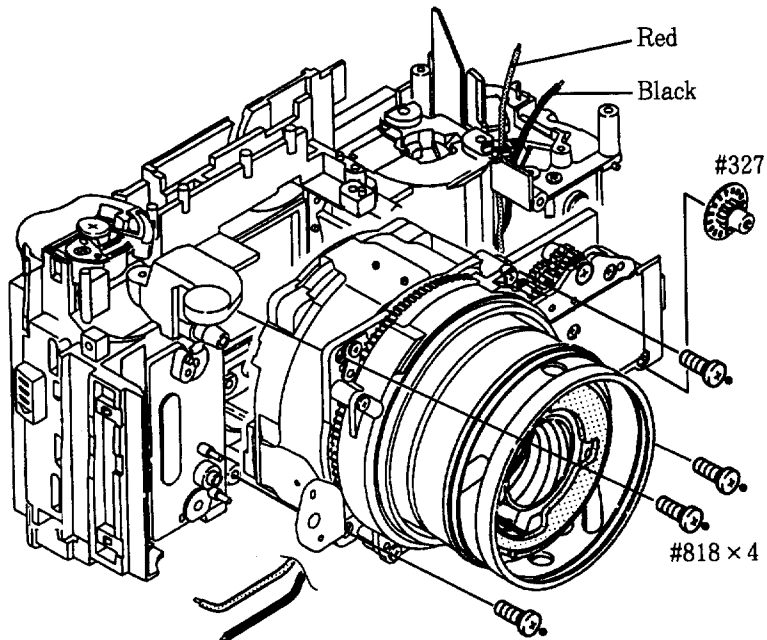


- Apply slightly grease G92KA to each gear and gear shaft.

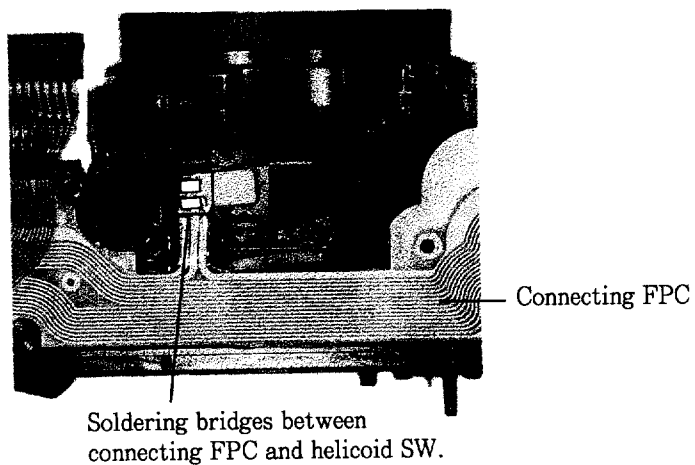
CONNECTING FPC



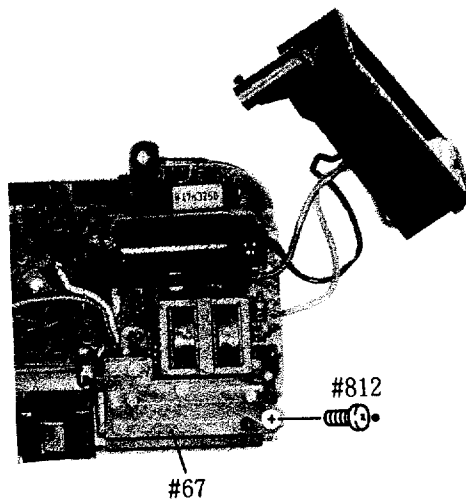
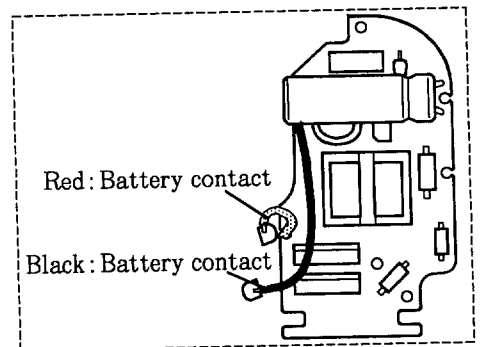
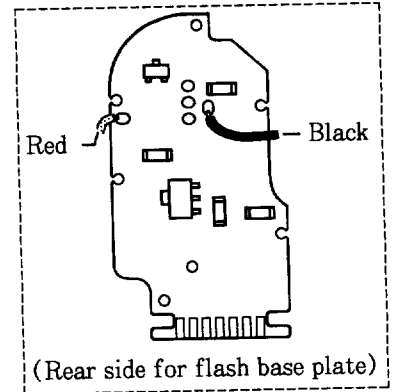
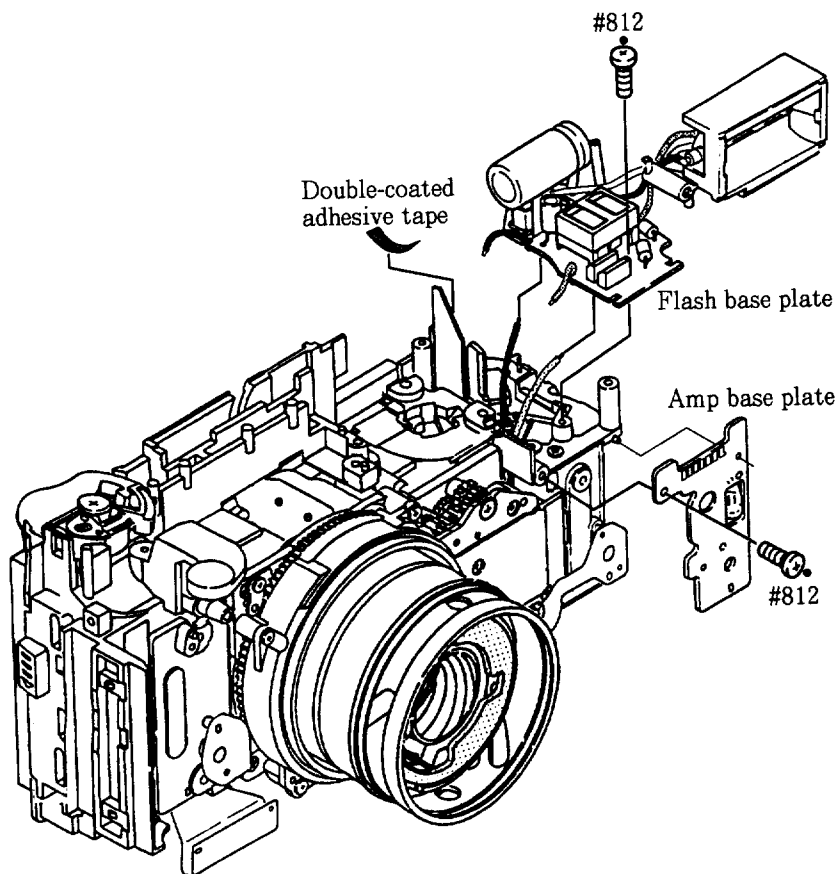
### ALIGNING OF REAR BODY AND LENS BARREL UNIT



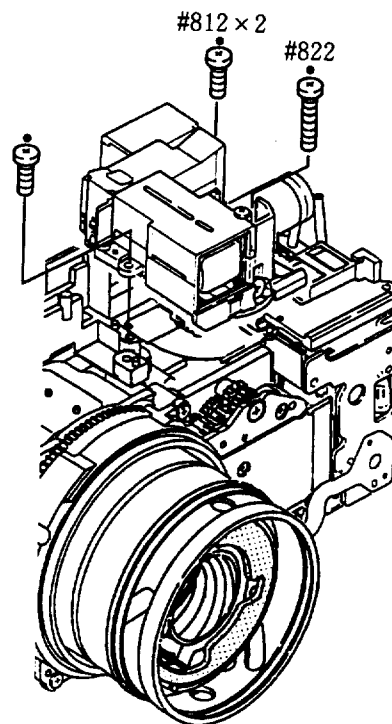
- Pass red and black wires through as shown in the figure. Align the rear body with the lens barrel unit while taking care of the FPC and other wires.



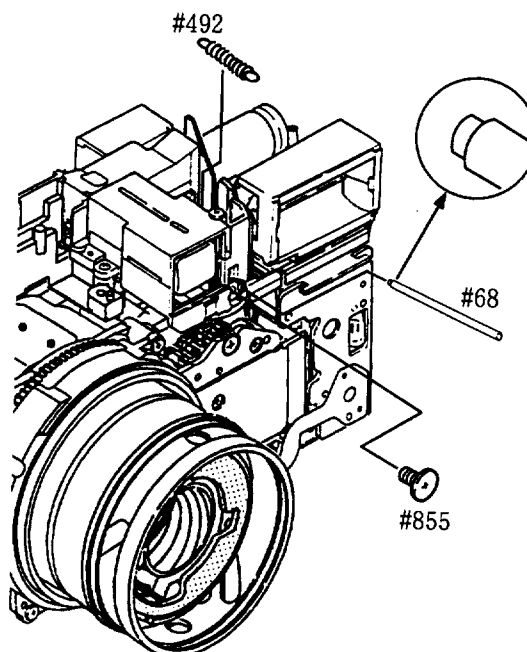
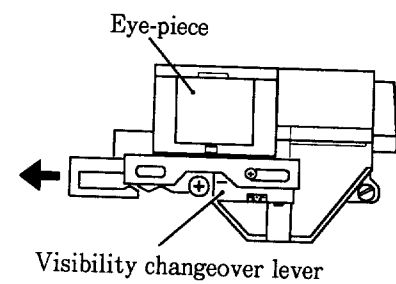
FLASH BASE PLATE UNIT, AMP BASE PLATE UNIT



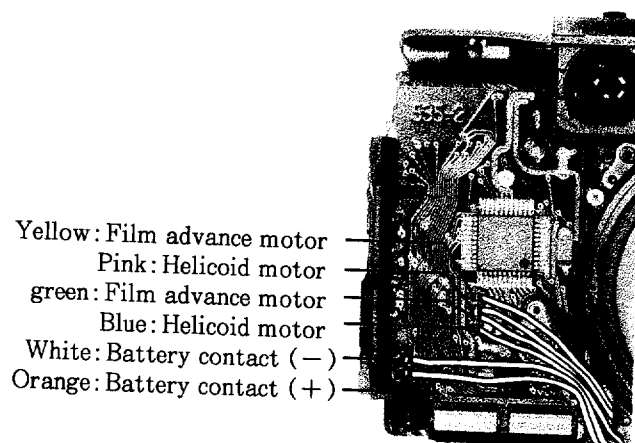
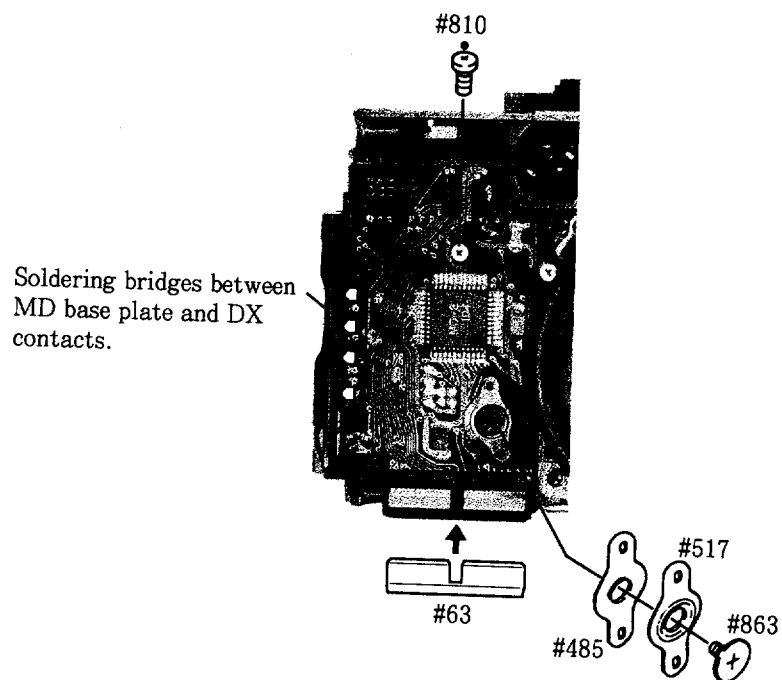
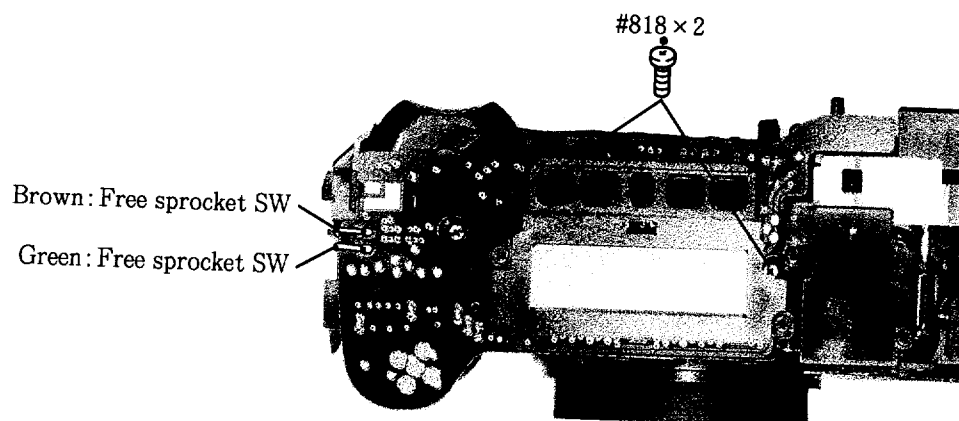
## VIEWFINDER GROUP



**Reference:** Viewfinder group can easily be mounted when the visibility changeover lever comes to the -1DP position. (Refer to the figure below)

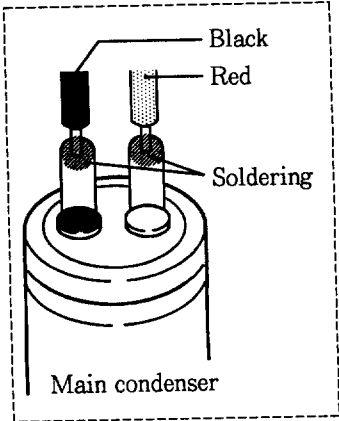
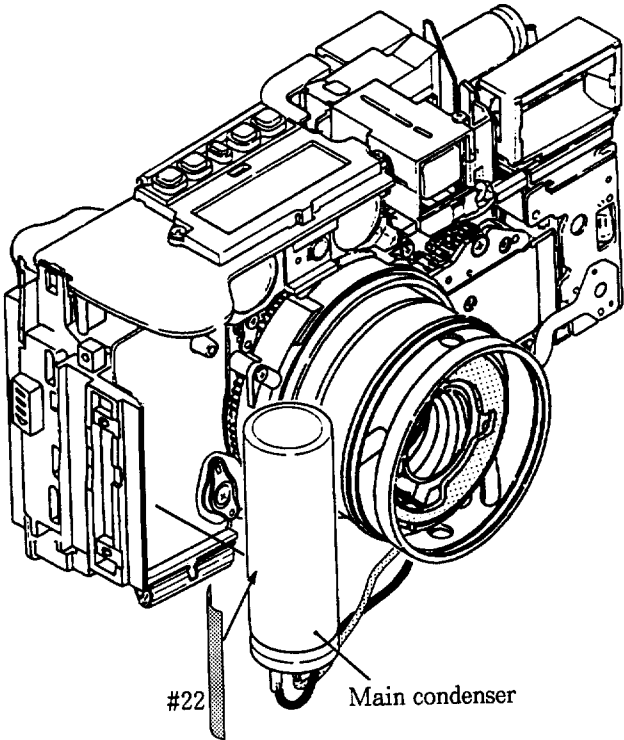


## AF UNIT

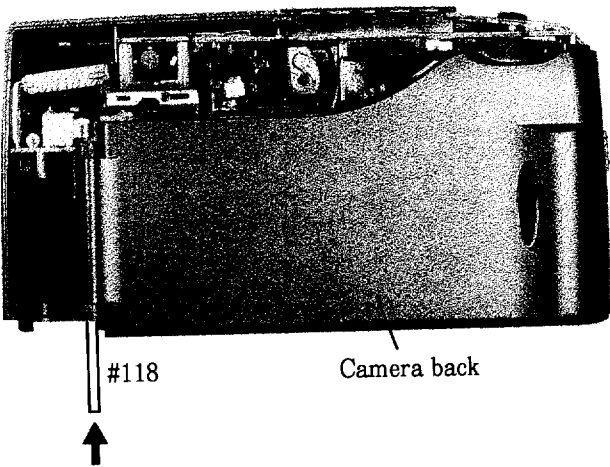




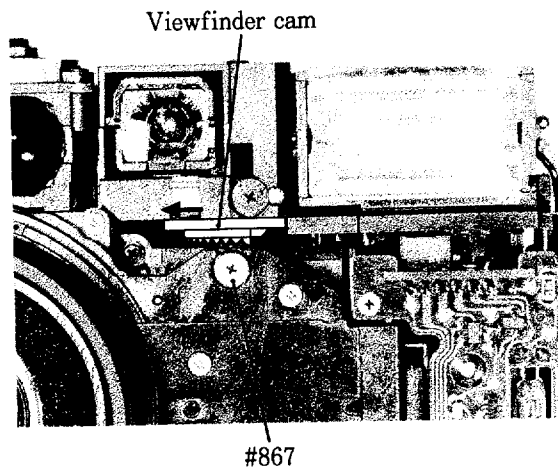
MAIN CONDENSER



CAMERA BACK

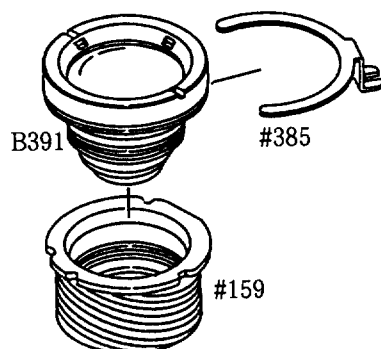


# ADJUSTMENT VIEWFINDER CAM POSITION

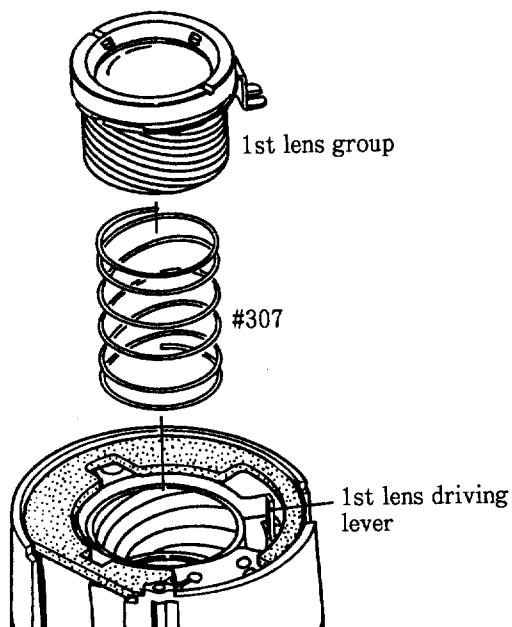


- ① Loosen the #867.
- ② Install the batteries and let lens barrel be put in reset position.
- ③ Rotate the viewfinder cam in the direction indicated by the arrow until it stops.
- ④ Tighten the #867.

## 1st LENS GROUP

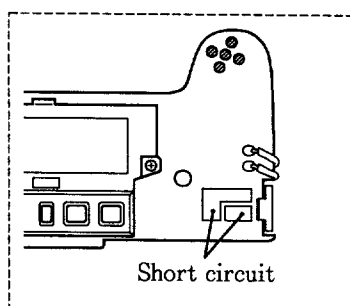
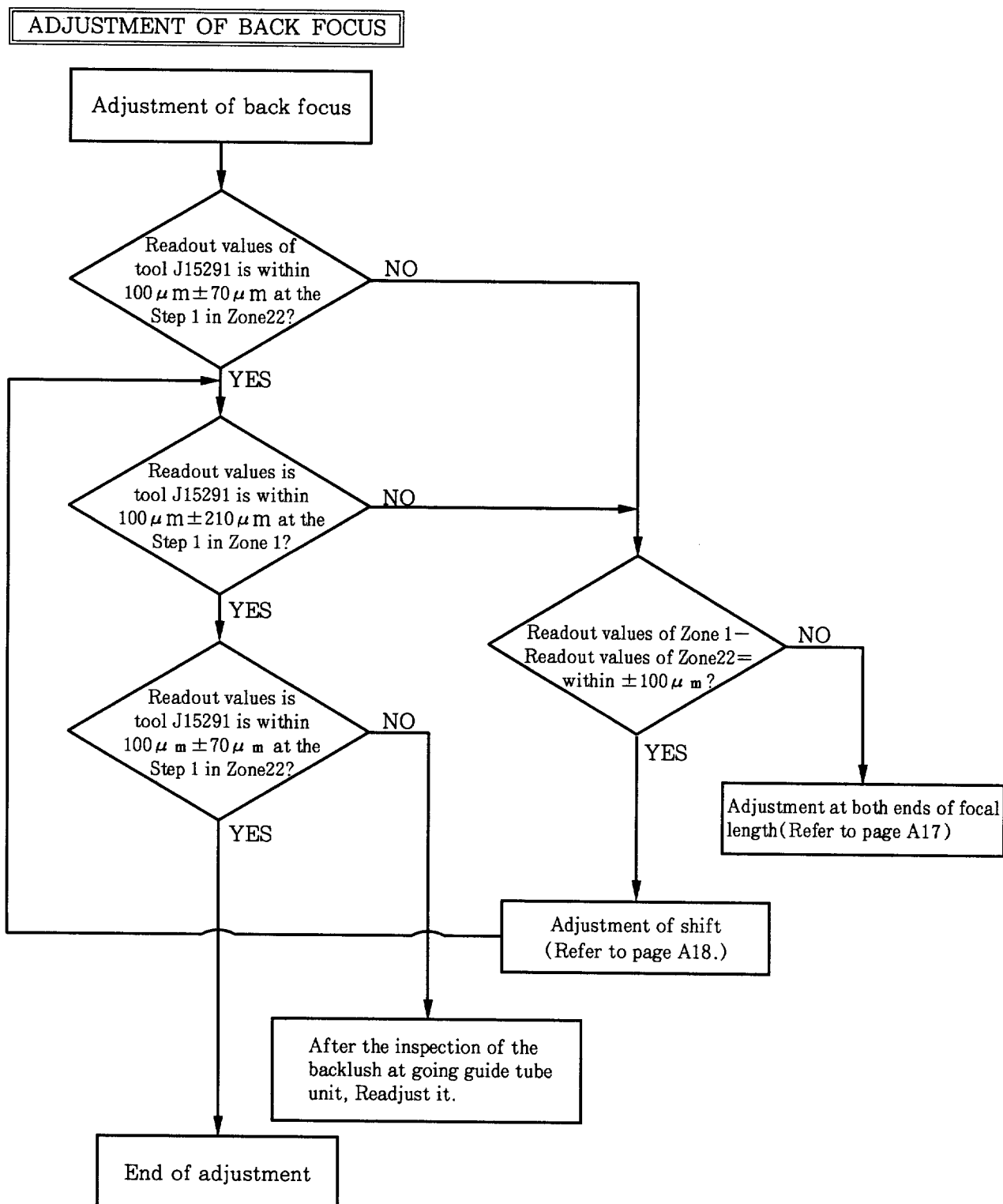


- ① Attach 1st lens group unit B391 with focus ring #385 and then unite #159 with them.



- ② Mount the 1st lens group energize spring #307.
- ③ Rotating the 1st lens group counter clockwise attach it.
- ④ Hold the focus ring to prevent it from rotating and screw down the 1st lens group unit counter clockwise to the position when it stops.

**Note:** Check to be sure that the 1st lens driving lever should be in the fork of the focus ring.

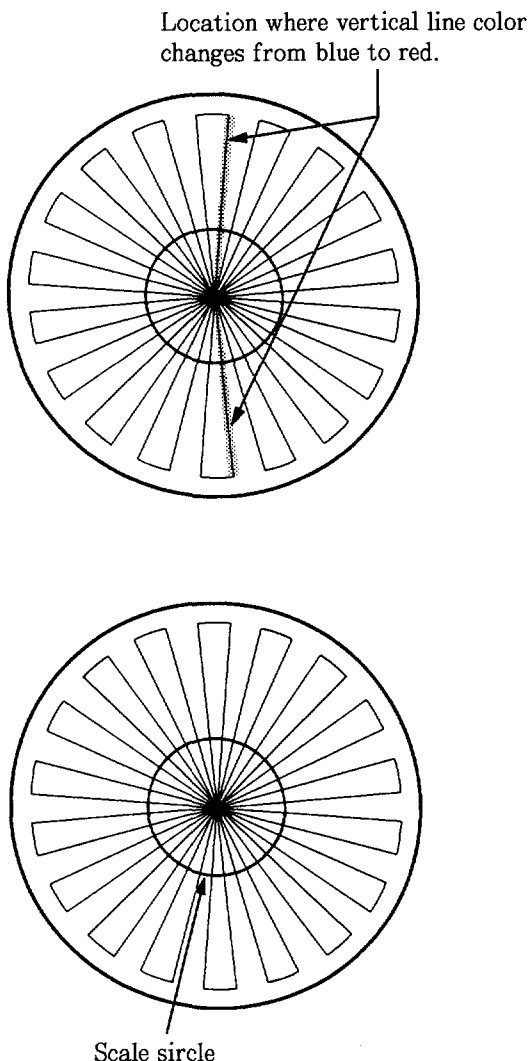


**Note:** Before the back focus is adjusted, be sure to short circuit of the main switch.

# 1. Adjustment at both ends of focal length

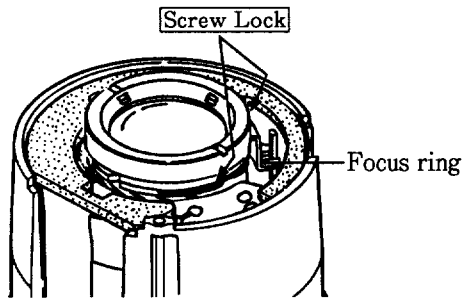
## Standard:

The difference between the Step 1 in Zone22 (Wide end) and the Step 1 in Zone 1 (Tele ends) is within  $\pm 100 \mu\text{m}$ .



- ① Rotate the objective lens of the collimator (J19019) to set the scale to  $-0.9\text{mm}$  (minus 9 calibration).  
\*Do not rotate the objective lens afterward.
- ② Set the scale of the FFD adjustment micro stand (J15291) to "0".
- ③ Set the camera to Zone22 (Wide end) and Bulb in accord with Step 1 in manual inspection mode.
- ④ Rotate the spindle of the tool J15291 to focus the collimator and readout the value of the tool J15291.  
Focus the collimator when the screen color of the collimator changes from blue to red. (See the figure on the left.)
- ⑤ Set the camera to Zone 1 (Tele end), and to Bule at the Step 1 in manual inspection mode. Focus the collimator and readout value of the tool J15291.  
Focus is made at the in-focus position in the scale circle on the collimator.
- ⑥ If the difference between Zone22 (Wide end) and Zone 1 (Tele end) is more than  $100 \mu\text{m}$ , set the value of the tool J15291 to one calculated from the following equation.  

$$B = W + 1.16 \times (W - T)$$
 where  
 B: Set position of the tool J15291 ( $\mu\text{m}$ )  
 W: Readout value of Zone22 ( $\mu\text{m}$ )  
 T: Readout value of Zone 1 ( $\mu\text{m}$ )



- ⑦ Set the camera Zone 22 (Wide end), rotate the 1st lens group unit to focus the collimator.

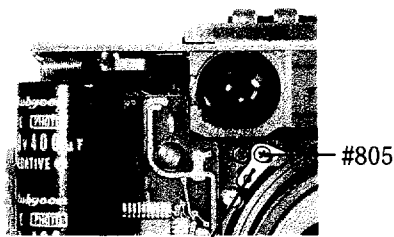
The direction of 1st group rotation	The color of screen in the collimator
Clockwise	Blue will be deep
Counter clockwise	Red will be deep

- ⑧ Recheck the values at Tele end and Wide end positions. If these values are out of standard, repeat steps ⑤ to ⑦.

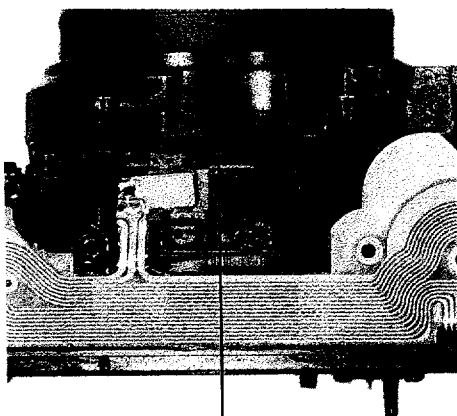
- ⑨ After adjustment, secure the focus ring with the Screw Lock (two portions).

\*As the above adjustment at both ends of focal length are easily made by using the adjustment software, make adjustments as indicated.

## 2. Adjustment of shift



Shift stopper



Shift ring

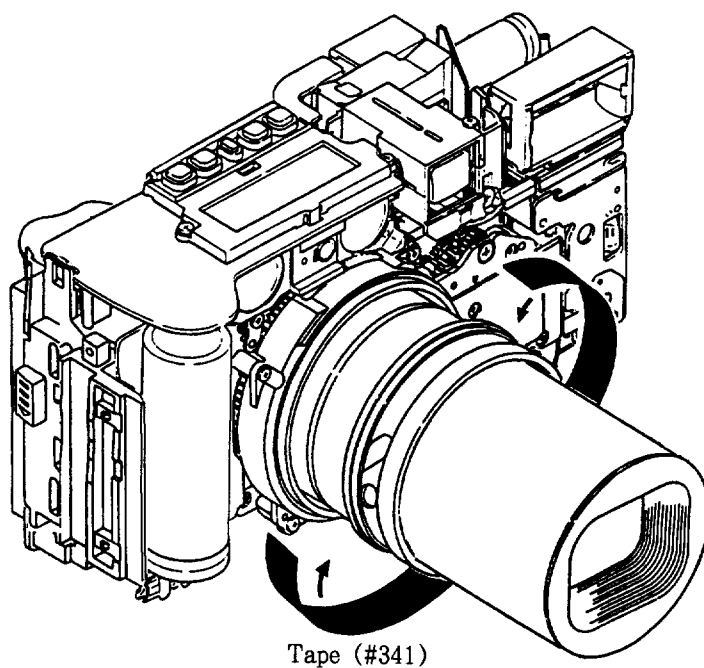
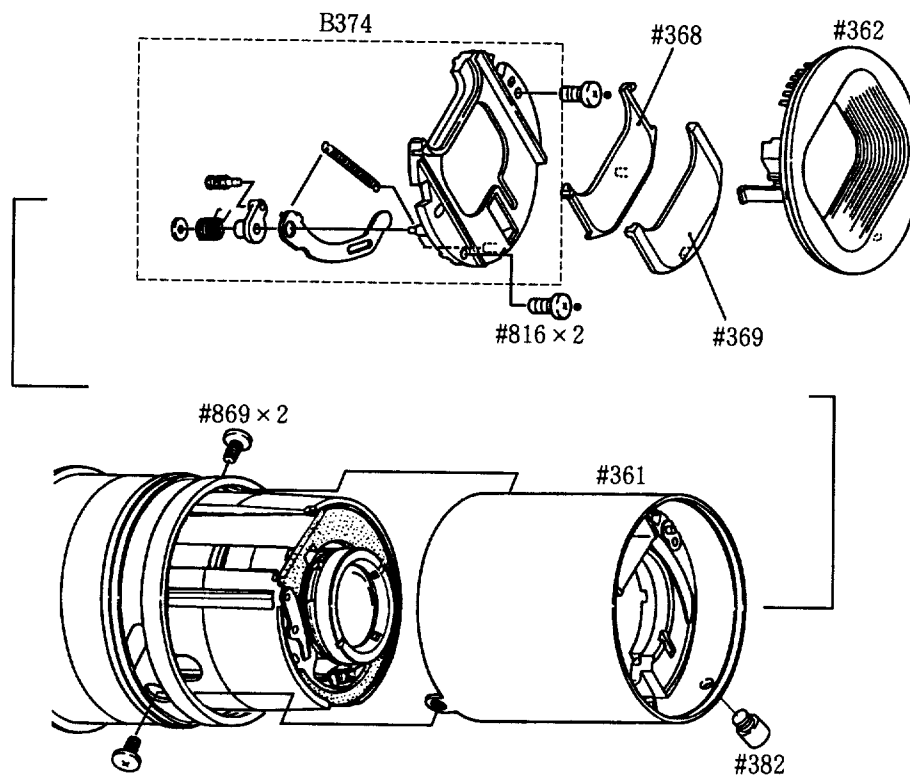
- ① Readout the value of Step 1 in Zone22 (Wide end).

**Standard value:**  $100 \mu\text{m} \pm 70 \mu\text{m}$   
( $+30 \mu\text{m} \sim +170 \mu\text{m}$ )

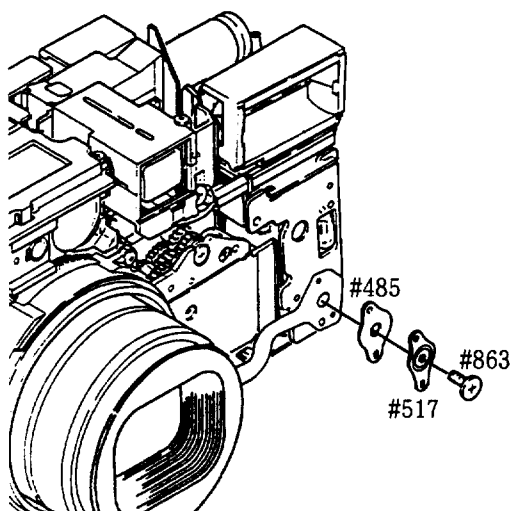
- ② If out of the standard range, move the shift ring to adjust. (The amount of change per shift stopper 1 cog is about  $6 \mu\text{m}$ )

\*When all adjustment of back focus have been completed, fix the shift stopper with screw #805.

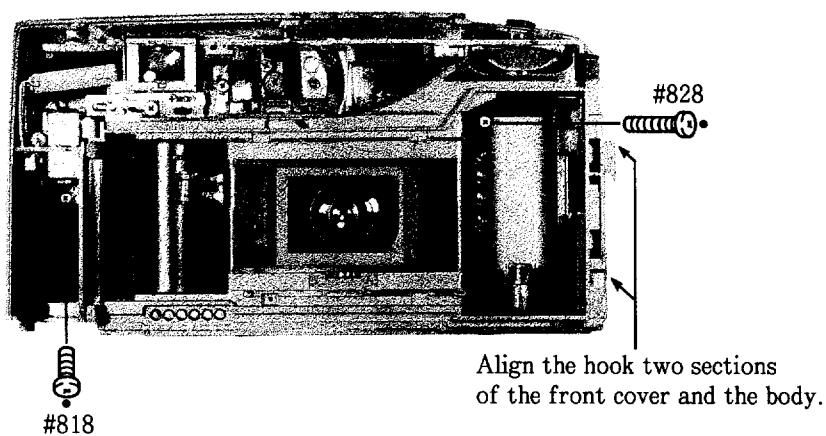
LENS COVER UNIT



## PRESS-CONTACT BETWEEN THE CONNECTING FPC AND THE AMP BASE PLATE

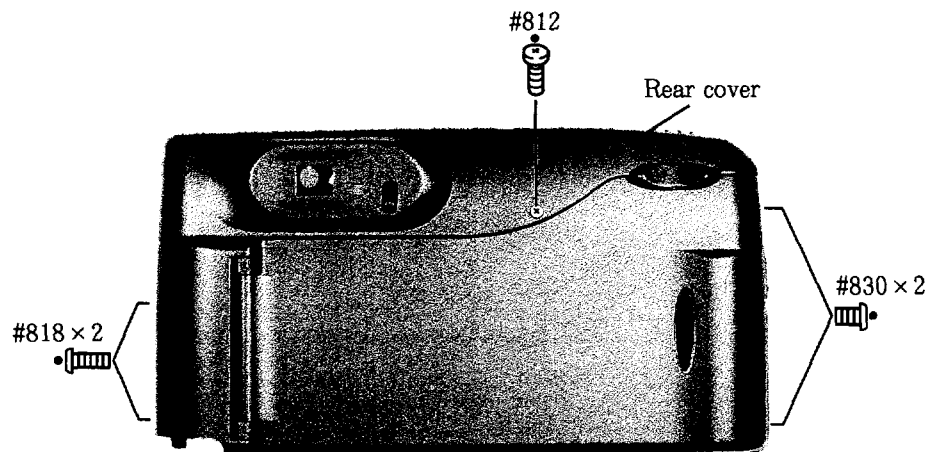


## FRONT COVER



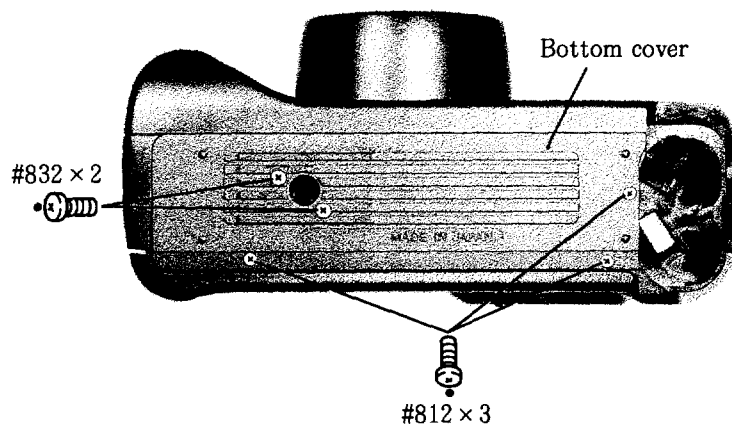
- Attach the shutter release button and light-baffle ring to the front cover, and mount the front cover.

# REAR COVER



**Note:** When mounting the rear cover, do not bend the power SW brush.

# BOTTOM COVER



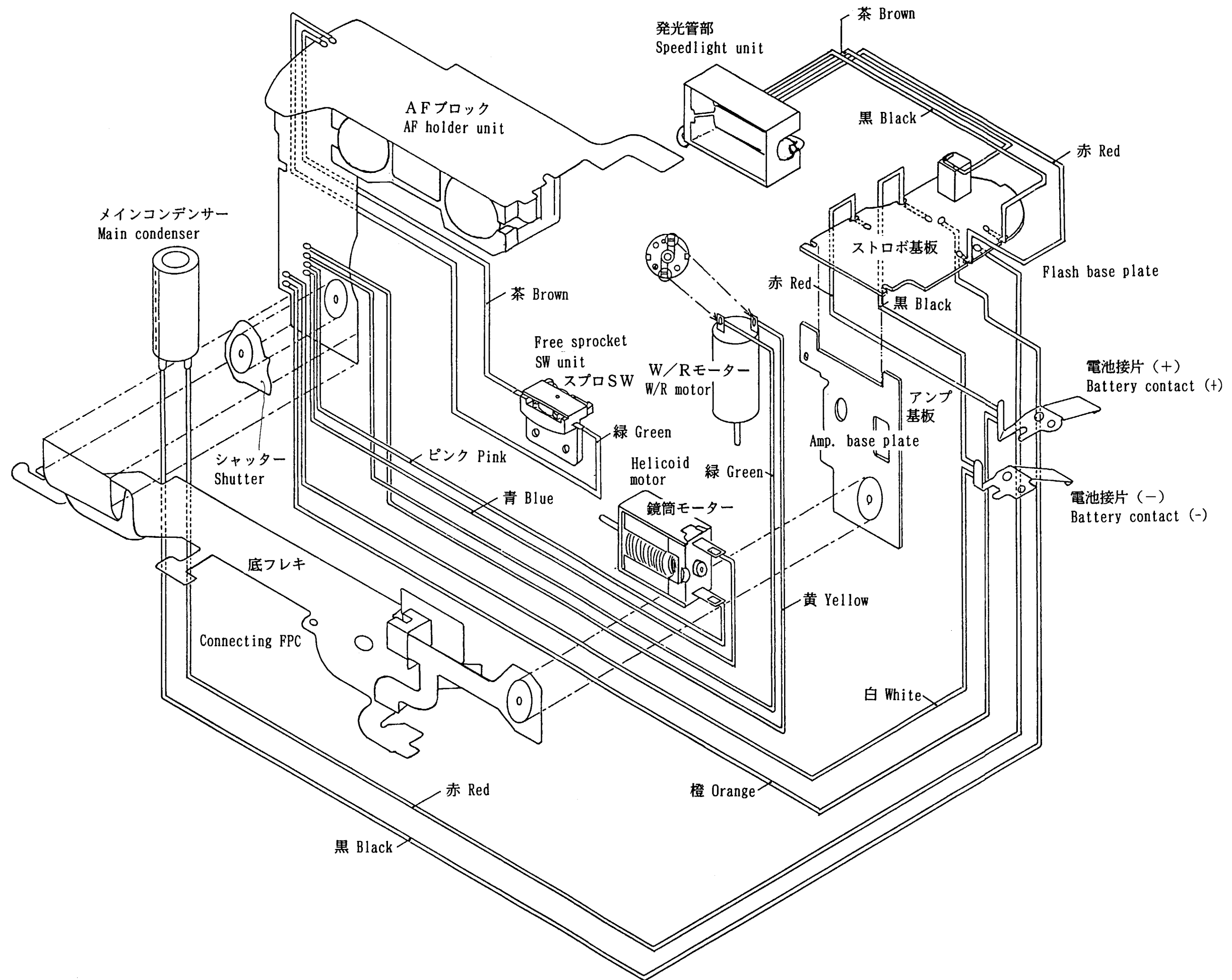


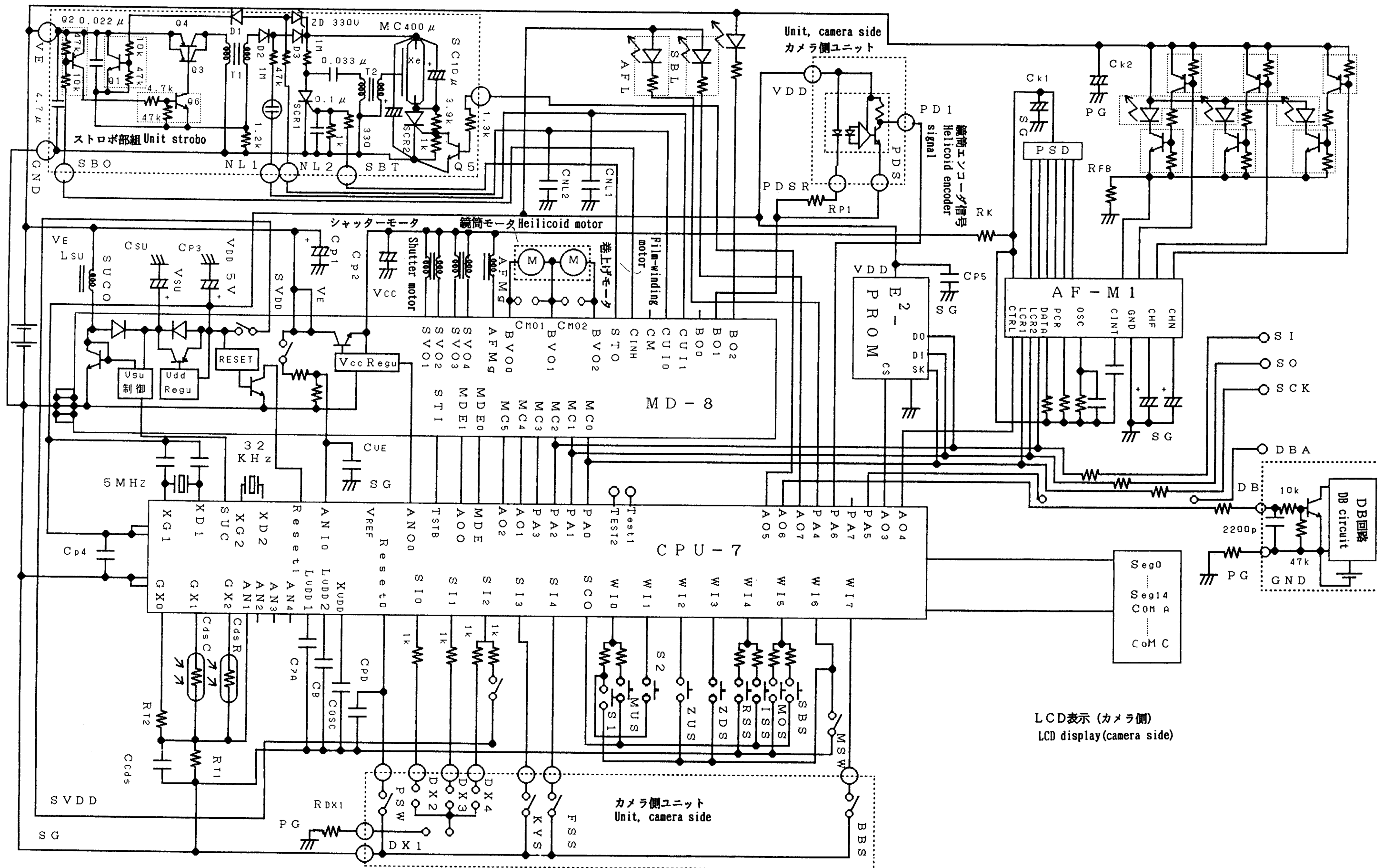
電気編

実体配線図	-----	E 1
回路図	-----	E 2
S B 回路図	-----	E 3
ストロボ基板	-----	E 4
アンプ基板	-----	E 6

E l e c t r i c C i r c u i t

WIRING DIAGRAM	-----	E 1
CIRCUIT DIAGRAM	-----	E 2
SB CIRCUIT DIAGRAM	-----	E 3
FLASH P. C. B.	-----	E 4
AMP P. C. B.	-----	E 6

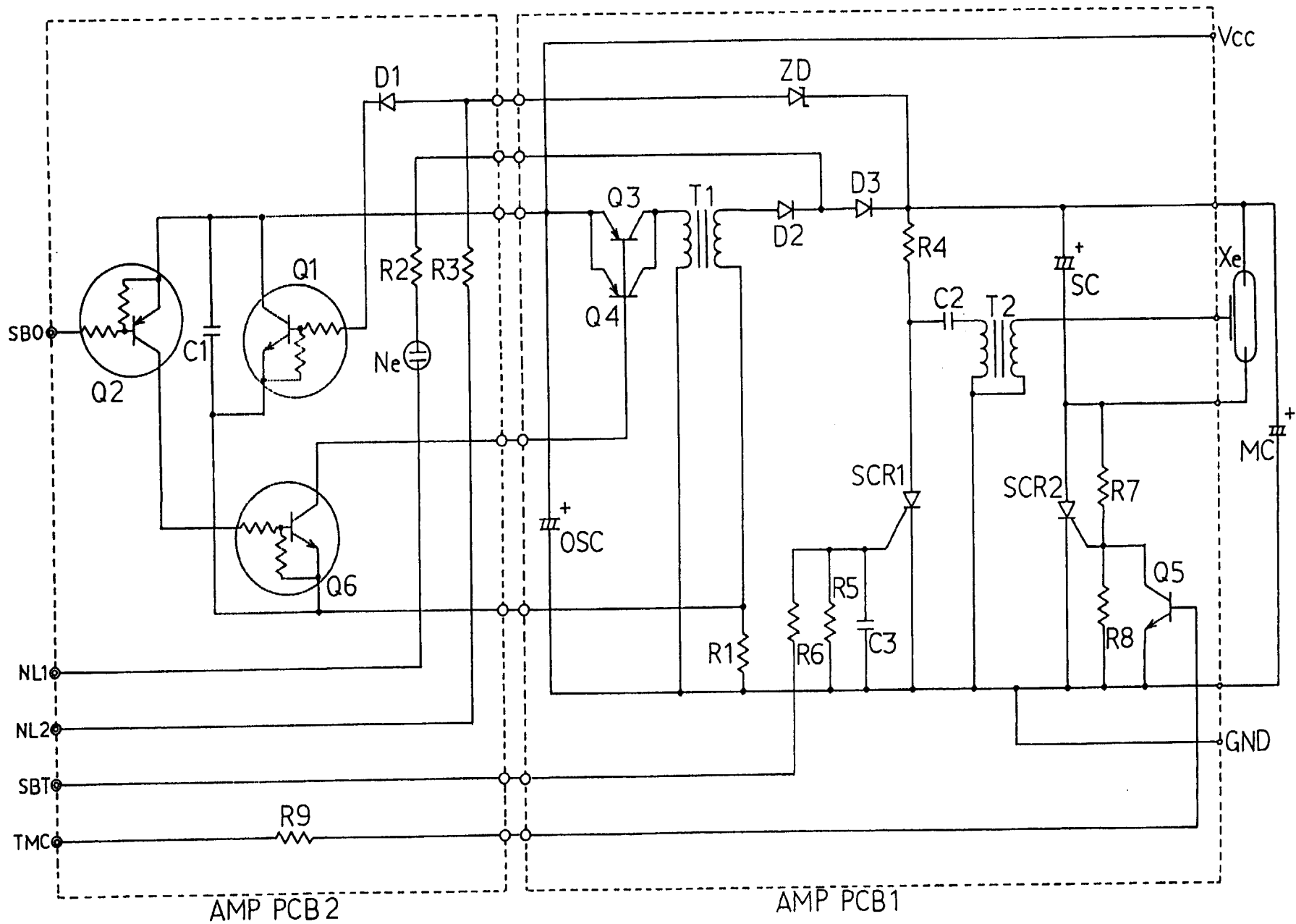




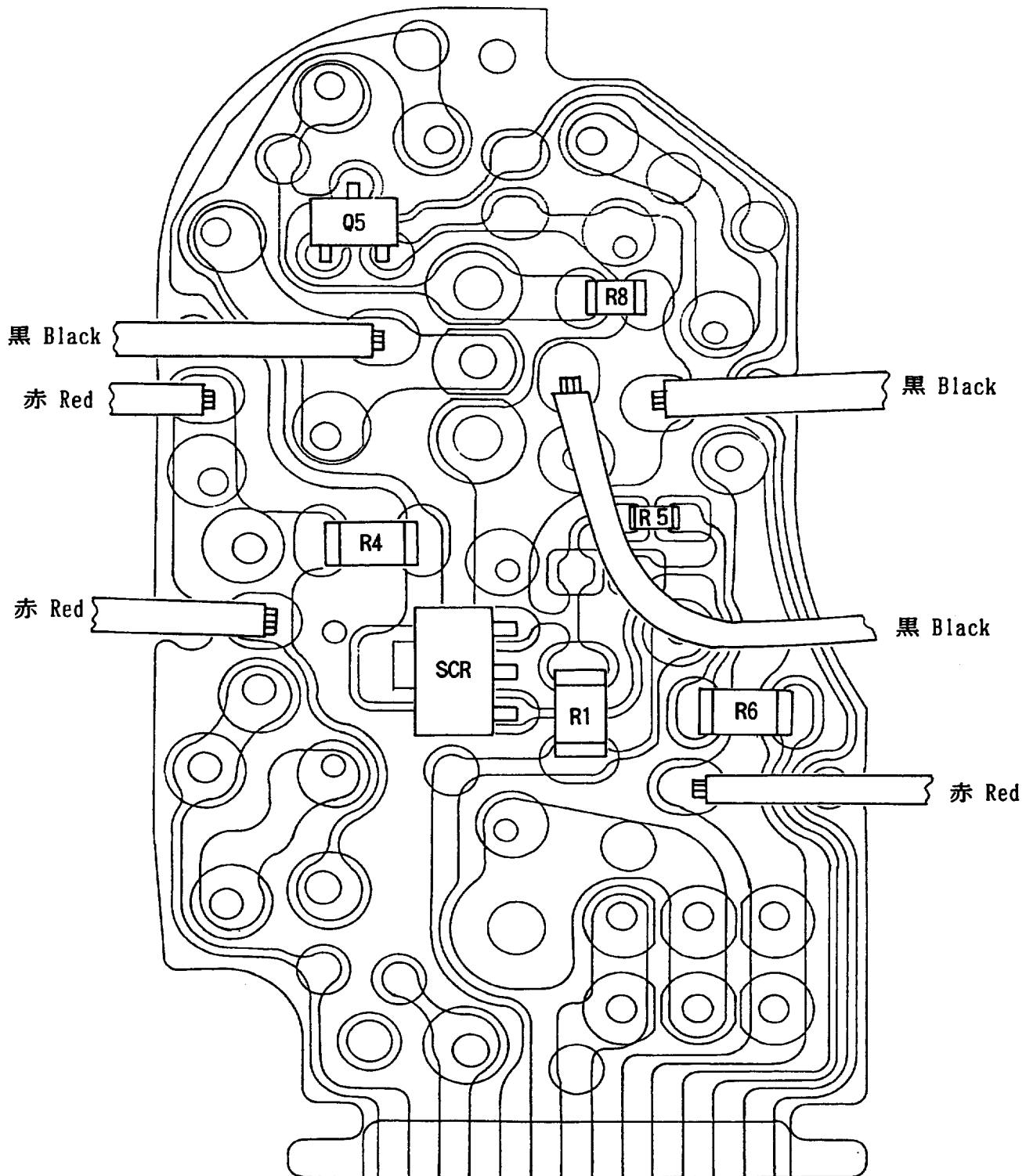
LCD表示 (カメラ側)  
LCD display (camera side)

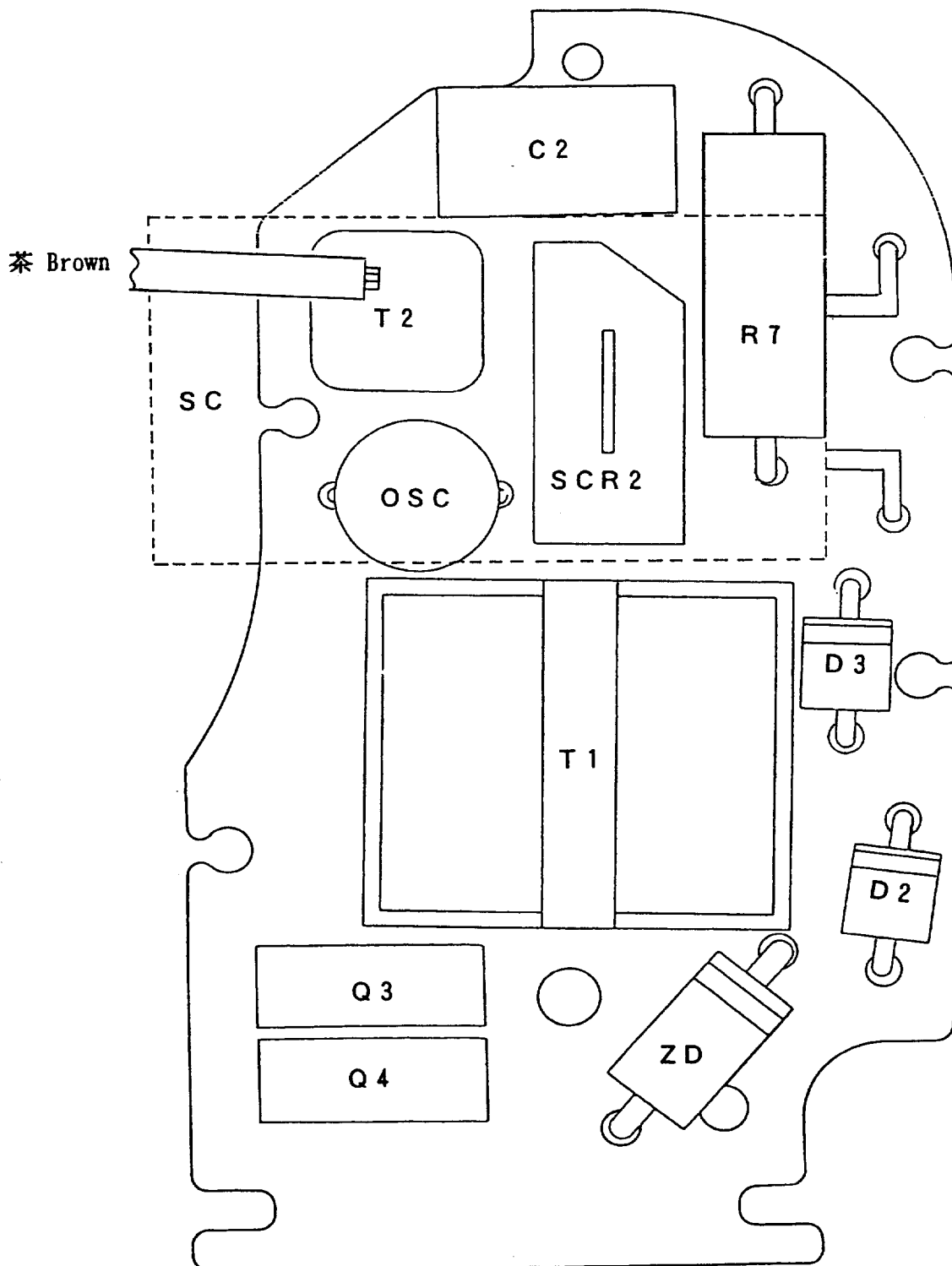
# SB回路图 SB CIRCUIT DIAGRAM

FCA17001-R. 3316. A

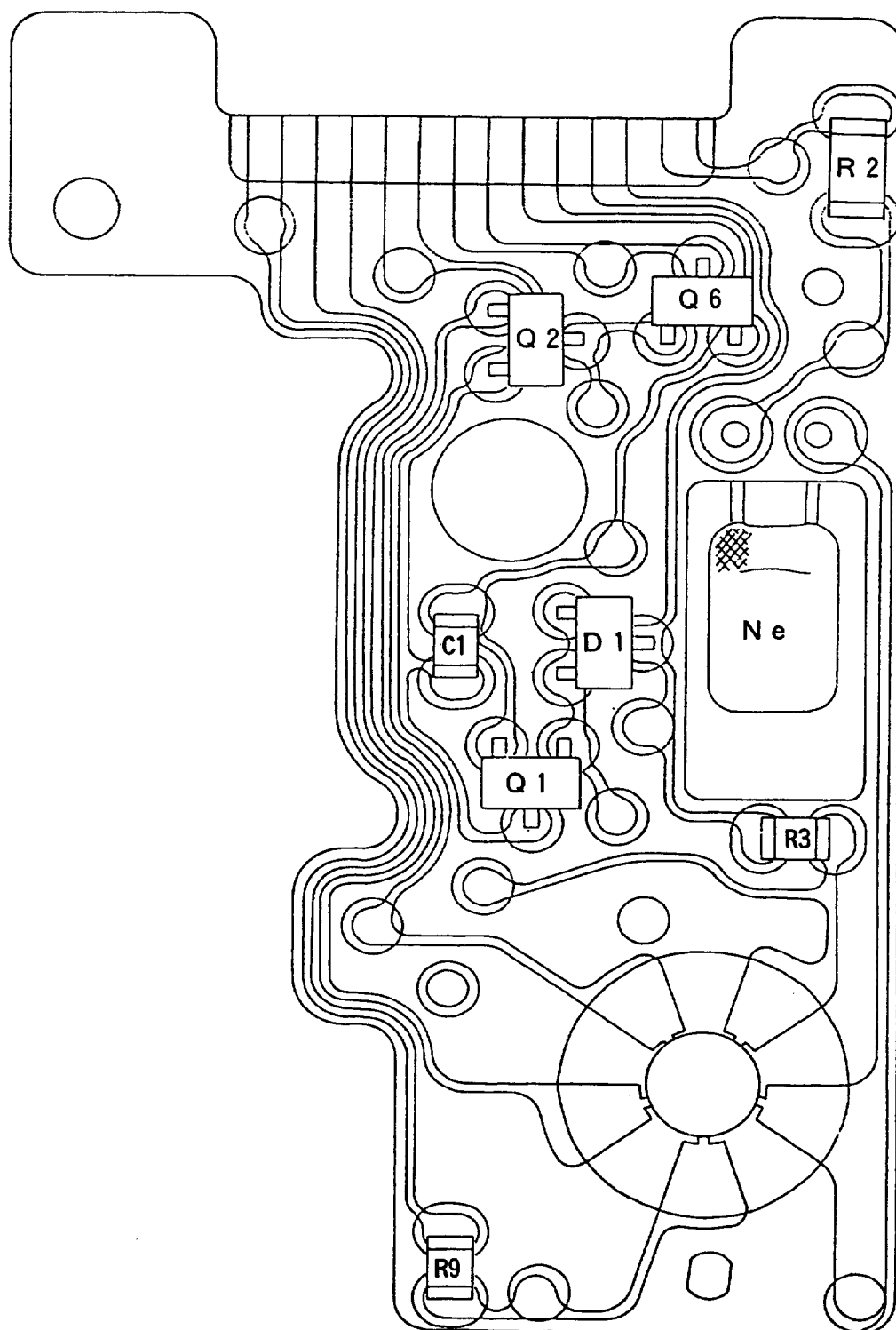


ストロボ基板  
FLASH P. C. B.





アンプ基板  
AMP. P. C. B.



INSPECTION STANDARD FOR REPAIR & TOOLS

(1) INSPECTION STANDARD FOR REPAIR .....	R 1
(2) TOOLS .....	T 1

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CONDITION FOR INSPECTION

Normal temperature:  $20 \pm 5$  ° C (Relative humidity:  $65 \pm 20\%$ )

Power source:  $6.0 \pm 0.03$  V, 2A or more at  $1.0 \Omega$  load

Light source: Surface light source 2856° K

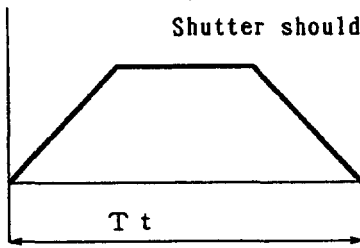
K coefficient: 1.3

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# [1] INSPECTION STANDARD

FCA17001-R. 3316. A

	IETEM	STANDARD	TOOLS																																	
FRAMES	Picture frame	Width: $24^{+0.8}_{-0.3}\text{mm}$ Length: $36^{+0.8}_{-0.3}\text{mm}$ Panorama width : more than 6.65mm at the center of frame.	Slide calipers Scale Film																																	
	Frame-to-frame space	0.5mm ~3.5mm																																		
	Frame position	Over 0.2mm between film perforation and frame. Inclination of frame is less than 0.15mm.																																		
AB ACCURACY	AB accuracy	Inspection result should meet the following conditions. (ISO 100)	BF-511N DC regulated power supply																																	
	<table><tr><th colspan="2">Exposure value</th><th>Allowance</th><th>Exposure variation</th><th>Difference of each EV</th></tr><tr><td>Z:22</td><td><math>6 \leq \text{EV} \leq 6.125</math></td><td rowspan="2"><math>\pm 0.7 \text{ EV}</math></td><td rowspan="2">1.4EV</td><td rowspan="8">Not to be inverted</td></tr><tr><td>Z:01</td><td><math>7 \leq \text{EV} \leq 8.75</math></td></tr><tr><td>Z:22</td><td><math>6.125 &lt; \text{EV} \leq 9.125</math></td><td rowspan="2"><math>\pm 1.2 \text{ EV}</math></td><td colspan="2" rowspan="2">1.0EV</td></tr><tr><td>Z:01</td><td><math>8.75 &lt; \text{EV} \leq 11.75</math></td></tr><tr><td>Z:22</td><td><math>9.125 \leq \text{EV} \leq 14.75</math></td><td rowspan="2"><math>\pm 1.0 \text{ EV}</math></td><td colspan="2" rowspan="2">1.0EV</td></tr><tr><td>Z:01</td><td><math>11.75 \leq \text{EV} \leq 15.0</math></td></tr><tr><td>Z:21</td><td><math>15.0 \leq \text{EV} \leq 15.875</math></td><td rowspan="2"><math>\pm 1.5 \text{ EV}</math></td><td colspan="2" rowspan="2">1.3EV</td></tr><tr><td>Z:01</td><td><math>15.0 \leq \text{EV} \leq 17.0</math></td></tr></table>			Exposure value		Allowance	Exposure variation	Difference of each EV	Z:22	$6 \leq \text{EV} \leq 6.125$	$\pm 0.7 \text{ EV}$	1.4EV	Not to be inverted	Z:01	$7 \leq \text{EV} \leq 8.75$	Z:22	$6.125 < \text{EV} \leq 9.125$	$\pm 1.2 \text{ EV}$	1.0EV		Z:01	$8.75 < \text{EV} \leq 11.75$	Z:22	$9.125 \leq \text{EV} \leq 14.75$	$\pm 1.0 \text{ EV}$	1.0EV		Z:01	$11.75 \leq \text{EV} \leq 15.0$	Z:21	$15.0 \leq \text{EV} \leq 15.875$	$\pm 1.5 \text{ EV}$	1.3EV		Z:01	$15.0 \leq \text{EV} \leq 17.0$
	Exposure value			Allowance	Exposure variation	Difference of each EV																														
	Z:22	$6 \leq \text{EV} \leq 6.125$		$\pm 0.7 \text{ EV}$	1.4EV	Not to be inverted																														
	Z:01	$7 \leq \text{EV} \leq 8.75$																																		
	Z:22	$6.125 < \text{EV} \leq 9.125$		$\pm 1.2 \text{ EV}$	1.0EV																															
	Z:01	$8.75 < \text{EV} \leq 11.75$																																		
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	Z:21	$15.0 \leq \text{EV} \leq 15.875$		$\pm 1.5 \text{ EV}$	1.3EV																															
Z:01	$15.0 \leq \text{EV} \leq 17.0$																																			
Allowance: Range of the values inspected five times Exposure variation: Difference between min. and max. values EV inspected five times Difference of each EV: Difference between average value of each EV inspected five times																																				
AB voltage characteristics	Exposure difference is within 0.3EV when measured with regular voltage (7.0V) and minimum operating voltage at LV12 with ISO 100 film speed setting.																																			
Shutter operation in bright condition	Shutter should open at LV12 with ISO 1600 film speed setting.																																			
FM ACCURACY	Expopsure limit for flash photography	Fire flash in darkness and measure exposure time.  $T_t = 22.2 \pm 6\text{ms}$ Slow sync = $250\text{ms} \pm 50\text{ms}$ Shutter should open fully.  																																		

	ITEM	STANDARD						TOOLS		
PM ACCURACY	Adjustment of tester	Settings: ISO 100, K=1.3, LV9 Set lens to Wide position, open shutter sector and then set camera to tester. Under above condition, set tester's switch to "CAL" and adjust tester with variable resister so that indication will be +0.7EV.						AB tester		
AP ACCURACY	AP step location and switching position		Amount G1 lens move out				Amount G1 lens move out			
			Step	Distance set		Swiching point	Step	Distance set		Swiching point
		Distance			Distance					
	1	41.3442 m	0.0201mm	Step 01	15	1.2594	0.7130	1.2207		
	2	12.0029	0.0696	8.0000m	16	1.1842	0.7625	1.1505		
	3	7.0577	0.1190	5.8165	17	1.1181	0.8120	1.0885		
	4	5.0085	0.1686	4.3606	18	1.0597	0.8615	1.0334		
	5	3.8948	0.2180	3.4955	19	1.0076	0.9110	0.9841		
	6	3.1917	0.2675	2.9223	20	0.9608	0.9605	0.9398		
	7	2.7083	0.3170	2.5146	21	0.9608	1.0100	0.8997		
	8	2.3557	0.3665	2.2099	22	0.8805	1.0595	0.8633		
	9	2.0871	0.4160	1.9735	23	0.8457	1.1090	0.8300		
	10	1.8757	0.4655	1.7848	24	0.8139	1.1584	0.7995		
	11	1.7050	0.5150	1.6306	25	0.7847	1.2079	0.7715		
	12	1.5642	0.5645	1.5024	26	0.7578	1.2574	0.7457		
	13	1.4462	0.6140	1.3940	27	0.7328	1.3070	0.7218		
	14	1.3458	0.6635	1.3011	28	0.7099	1.3564	0.6996		
	Distance-too-close warning		• Green LED blinks to warn. • Normal 0.620.65mm • Flash cancel 0.67~0.70m						Standard reflector paper	
	Distance-too-far warning		• Green LED blinks to warn. • ISO 64-200 • Step ③ & ④ swiching point :beyonded ±0.5 • ISO 400-3200 • Step ② & ③ swiching point :beyonded ±0.5							

	ITEM	STANDARD			TOOLS	
LENS BARREL	Time and current when lens barrel switches over	Position	Operating time	Current	Oscilloscope	
		R e ⇨ W	Within 0.3 sec	Within 700mA		
		W ⇨ • ⇨ T	Within 1.5 sec			
		T ⇨ R e	Within 1.8 sec			
	Timer driving	• 180 sec. ± 2 sec. • Lens barrel should return to the position Z22. • LCD should go out when time is up.				
	Abnormally stops	• LCD indicator blinks at 2Hz and lens barrel stops at this position. • After LCD blinks for 3 min. it lights off.				
BACK FOCUS	Back focus	Set adjustment focus stand on film guide rail and set lens to step 1. Wide setting: 100 ± 70 μm Tele setting: 100 ± 210 μm			Collimator (J19019) Adjustment focus stand (J15291)	
	Difference between T and W	Value for T is within ± 100 μm compared with that for W.				
OPERA- TIONAL SWITCHS, BUTTONS, BTC.	Main switch		Stroke	Tension	Dial gauge Tension gauge	
		ON position	2.2 ± 0.3mm	125g ± 20g		
		Whole stroke	(2.5mm)	200g ± 80g		
	Shutter release button		Reference	Stroke	Tension	
		A) Pre-release (S1-ON)	Height in free state	0.8 ± 0.3mm	85g ± 20g	
		B) Release (S2 ON)	"	1.1 ± 0.3mm	350g ± 50g	
		C) Difference between A) & B)		0.3 ± 0.1mm	_____	
		Zoom lever	Measure tension and stroke at the position 7mm apart from the center of turning. Tension to turn on: 250 ± 100g Stroke to turn on: 0.6 ± 0.3mm			
		Function button	Tension to turn on: 100 ± 50g Stroke to turn on: 0.6 ± 0.3mm			

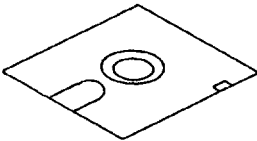
	ITEM	STANDARD	TOOLS							
OPERATIONAL SWITCHES, BUTTONS, ETC.	Mid-roll rewind button	Tension to turn on: $35 \pm 10\text{g}$ Stroke to turn on: $0.5 \pm 0.1\text{mm}$ (Height from edge of hole)	Dial gauge							
	Camera back open lever	Stroke to open = $1.3 \pm 0.3\text{mm}$ Whole stroke = $2.0\text{mm}$ (for reference) Tension to open: $350 \begin{smallmatrix} +15 \\ -100 \end{smallmatrix} \text{g}$ Tension to close: $1000 \pm 500\text{g}$	Dial gauge							
CONTACTS, SPRINGS, PRESSURE PLATE, FILM ARMS, ETC.	Battery chamber	Tension of contact: $300\text{g}$ or more (at $3.5\text{mm}$ from ceiling of battery chamber)	Tension gauge							
	Film cartridge spring	Tension: $280 \pm 50\text{g}$ (when held by $1.3\text{mm}$ from body)								
	DX contacts	Tension: $43 \begin{smallmatrix} +15 \\ -10 \end{smallmatrix} \text{g}$ Height: $1.4 \begin{smallmatrix} +0.35 \\ -0.15 \end{smallmatrix} \text{mm}$ Measure tension when depressing contacts until there height is $1.0\text{mm}$ .								
	Pressure plate	Height = $3.0 \pm 0.2\text{mm}$ (From inside surface of camera back) Flatness: $0.05\text{mm}$ or less Tension of spring: $350 \sim 500\text{g}$ (When depressed by $0.05\text{mm}$ )								
	Film arm 1	Tension $50 \pm 15\text{g}$ (When depressed by $0.4\text{mm}$ )								
	Film arm 2	Tension $40 \pm 15\text{g}$ (When starting to move)								
MOTOR	Film advance	<table><tr><td></td><td>Operating time</td><td>Current</td></tr><tr><td>With film</td><td>Within <math>0.8 \text{ sec}</math></td><td><math>600\text{mA}</math> or less</td></tr></table>		Operating time	Current	With film	Within $0.8 \text{ sec}$	$600\text{mA}$ or less	Film Oscilloscope	
		Operating time	Current							
With film	Within $0.8 \text{ sec}$	$600\text{mA}$ or less								
Film rewind	<table><tr><td></td><td>Operating time</td><td>Current</td></tr><tr><td>Film end detection</td><td><math>2.4 \pm 0.5 \text{ sec}</math></td><td><math>900\text{mA}</math> or less</td></tr><tr><td>Film rewind</td><td>Within <math>30 \text{ sec}</math></td><td><math>400\text{mA}</math> or less</td></tr></table>		Operating time	Current	Film end detection	$2.4 \pm 0.5 \text{ sec}$	$900\text{mA}$ or less	Film rewind	Within $30 \text{ sec}$	$400\text{mA}$ or less
	Operating time	Current								
Film end detection	$2.4 \pm 0.5 \text{ sec}$	$900\text{mA}$ or less								
Film rewind	Within $30 \text{ sec}$	$400\text{mA}$ or less								

	ITEM	STANDARD	TOOLS															
FLASH	Flash level	Wide: EV 10.375 ±1.0EV Tele: EV 13.000 ±1.0EV (ISO 100)	Brightness box Brightness meter															
	Guide number	Wide: 15 ±0.4EV Tele: 16.8 ±0.4EV (ISO 100 distance 2m) PTS Wide: 0.8 or over Tele: 1.1 or over	Flash meter Tape measure Standard reflector paper															
	Recycling time	3.5 sec or shorter																
	Light distribution feature	Measure light at following points. Difference from center should be within 1.0EV. <table border="1"><tr><td></td><td>Top</td><td>Bottom</td><td>Right</td><td>left</td></tr><tr><td>Wide</td><td>20°</td><td>23°</td><td>28°</td><td>33°</td></tr><tr><td>Tele</td><td>7°</td><td>11°</td><td>10°</td><td>17°</td></tr></table> Remarkable unevenness is not to be found.		Top	Bottom	Right	left	Wide	20°	23°	28°	33°	Tele	7°	11°	10°	17°	Color temperature meter
		Top	Bottom	Right	left													
Wide	20°	23°	28°	33°														
Tele	7°	11°	10°	17°														
Color temperature	5,500 ±300 ° K																	
VIEW-FINDER	Diopter	- side =-1.0±0.5 dpt + side =+0.5±0.5 dpt	Diopter telescope															
	Viewfinder coverage	Wide: 83 $\pm 1\%$ Vertically/Horizontally Tele: 87.3 $\pm 1\%$ Vertically 84.9 $\pm 1\%$ Horizontally Panorama Ensured more than 80%. Measure at distance 3m	Viewfield chart Film scale															
	Parallax	Normal The angle of finder is with in the angle of aperture.  Panorama Vertically: ±1.3mm or less Horizontally: Same Fullsize.																
	Magnification	Wide: 0.43±0.05× Tele: 1.01±0.05×																

	ITBM	STANDARD	TOOLS
OTHERS	Self-timer	(Time in sec) $\pm 1$ sec	Stop watch
	Battery check voltage	4.2V(min.) LCD light up. 4.2 to 3.9V LCD blinks. (2Hz) 3.9V or lower LCD gone out. Shutter release lock	DC regulated power supply Digital multi-meter
	Standby current	10 $\mu$ A or less when main SW is off.	
	Pre-release current	30mA or less	
	Clearance on external surface	0.2mm or less	

## [2] TOOLS

## 1. Special tool

Tool No.	Name	Illustration	Class	Remarks
J18233A J18233B J18233C J18233D	TW Zoom 85 inspection & adjustment program		A	
J15305	TW Zoom 85 Communicatio tool (self-made)	See to other sheets		

## 2. Major general tools and testers

Tool No.	Name	Specifications
----	Slide calipers	
J5134	Torque driver	
J9001-5	DC regulated power supply	0-18V, 2A (MODEL 526)
J9006-6	Digital multimeter	Model 3200
J15291	Tool for adjusting focus stand	
J19019	Collimator	24LT-2DTS, f=193.5mm
J19036	Multi shutter tester	BP-511N
J18190	Standard reflector paper	OXFORD GRAY No. 22

## TOOL (J15305)

1. Name: Communication Tool for TW Zoom 85 (Modification is required.)

2. To be used for: Check and Adjustment on camera function

3. Preparation:

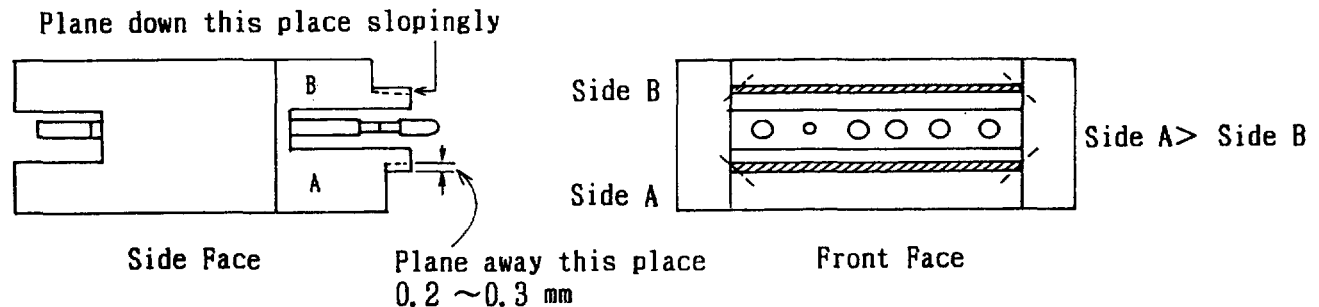
As it cannot be used without modification, please modify it by yourself.

The wires described below will be required for modification.

- \* Outer diameter; Approx. 1mm
- \* Length; Approx. 1.5m
- \* Quantity; Five pieces (in different colors)

4. How to assemble:

1) Process on Connector for Data Back contacts (Matching a pair of parts)

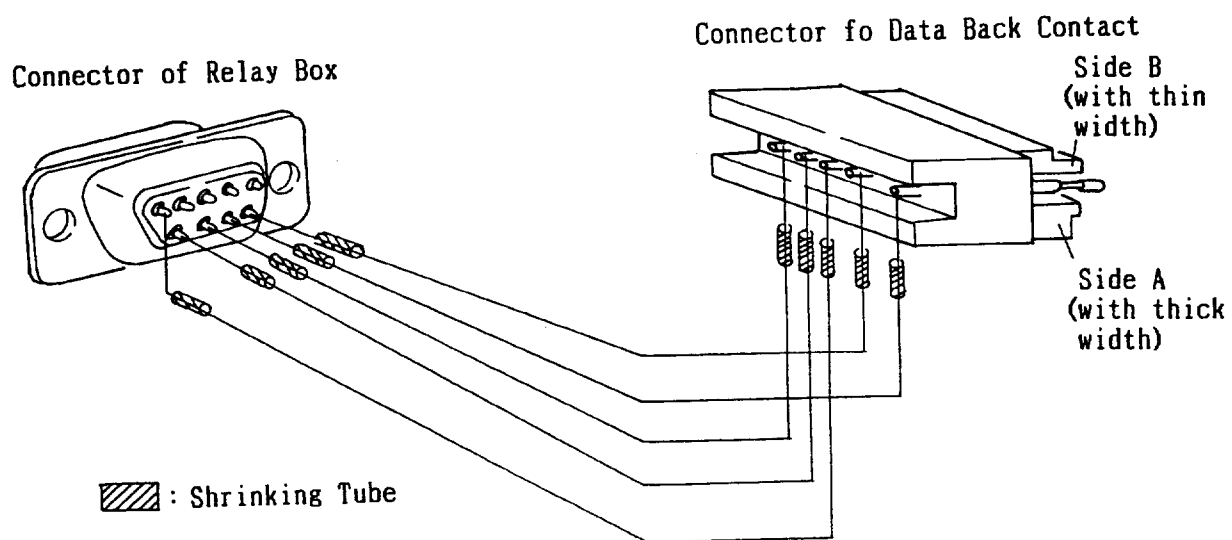


- \* See the sketch of Side Face. Plane away an under side of projected part about 0.2~0.3 mm.
- \* See the sketch of Front Face. Plane away the corners at four points. A slightly larger volume is to be planed on A side.
- \* Matching a pair of parts, plane away the upper side of projected part with some slope.
- \* Tight matching is recommended.

2) Soldering the wires

- \* Bundle five pieces of wires (by a band or similar article).
- \* Cover the each wire with heat shrinking tube, and then solder them to each connecting tip.





## 5. Cautions

- 1) When processing the Connector for Data Back Contact, please treat it carefully so as not to plane away the parts too much.
- 2) Please do not cause short circuit between the terminals by soldering.
- 3) The colors are not unified for wiring.

## TWZ85 (Zoom Touch 600) EEPROM表

1993-03-16版

アドレス	内 容	固 定 値
0	未使用	
1	A F 調整値	6 5 1 0 9
2		9 7 4 8
3		5 5 3 9 9
4		5 9 9 8
5		
?		
1 6		
1 7	A E 調整値	
?		
2 4		
2 5	シャッター調整値	
?		
4 3		
4 4	カメラ制御用データ	
?		
4 8	リリース回数	
4 9	フィルムデータ (前回)	
5 0	フィルムデータ (前々回)	
5 1	カメラ制御用データ	
5 2	カメラ制御用データ	
5 3	未使用領域	
?		
5 9		
6 0	カメラ制御用データ	
?		
6 3		

・各々のアドレスは、2 バイト (16 ビット) の値が記憶されている。  
 ・1つのアドレス内には各データがビット単位で、値が記憶されているので、むやみにデータの書き換えを行うと精度不良、作動異常の原因になります。

## TW Z o o m 8 5 (Zoom Touch600) E E P R O M D A T A

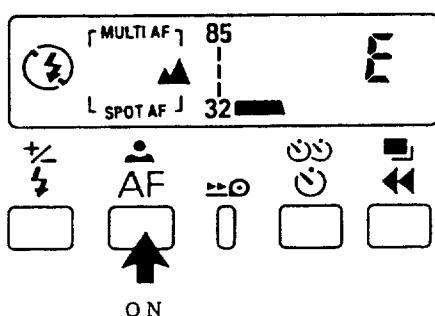
VER. 1993-03-16

ADDRESS	CONTENTS	FIXED
0	NOT IN USE	
1	AF ADJUSTMENT DATA	6 5 1 0 9
2		9 7 4 8
3		5 5 3 9 9
4		5 9 9 8
5		
?		
1 6		
1 7	AE ADJUSTMENT DATA	
?		
2 4		
2 5	SHUTTER DATA	
?		
4 3		
4 4	CAMERA CONTROL DATA	
?		
4 8	SHUTTER RELEASING TIMES	
4 9	FILM DATA (PREVIOUS)	
5 0	FILM DATA (BEFORE LAST)	
5 1	CAMERA CONTROL DATA	
5 2	CAMERA CONTROL DATA	
5 3	NOT IN USE	
?		
5 9		
6 0	CAMERA CONTROL DATA	
?		
6 3		

- Two bytes (16 bits) data are memorized in each address.
  - Each data is memorized in each address bit by bit.
- If you rewrite the data thoughtlessly, camera will be either inaccurate or malfunction.

**Manual inspection mode****1. Manual inspection mode input procedure:**

- 1) Turn the power ON. The lens barrel stops at other than RESET position and LCD is lit.
- 2) Turn AF button ON, then immediately afterward, turn ZUS (zoom-up switch) and S1 (pre-release switch) ON. Keep these three switches ON for ten seconds.
- 3) During the initial manual inspection mode, [MULTI AF] indicator, [SPOT AF] indicator on frame go out; frame counter is "0".



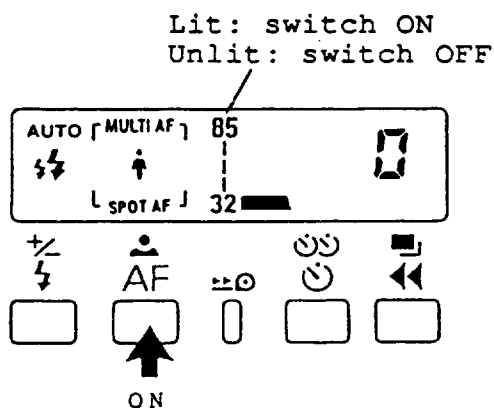
Turn the pre-release switch (S1) ON.

Turn ZUS ("T" side of zoom switch) ON.

**2. Command selection and switch/data setting**

- 1) In manual inspection mode, turn AF ON again for three seconds.
- 2) Turn ZSW to either the "W" or "T" side while keeping AF ON. Then, a number corresponding to each command is indicated on the frame counter. This number shows the command currently selected.

The current switch setting is indicated by the scale of the lens barrel zone indicator being lit, or, unlit. When the command to execute is selected, turn ZSW OFF while keeping AF ON.



When the pre-release switch is turned ON, the scale lights up; when turned off, it goes out.

"W" side to count down.  
"T" side to count up.

- ③ When the READ mode is selected in each of the AF step, the ISO value, the AE value and the EV value, turning on the S1 will show each corresponding resulted value on the film counter display.

\* By repeating these steps while keeping the ISS turned on, several commands can be set simultaneously.

### 3. Cancellation of the manual inspection mode

The manual inspection mode can be cancelled when:

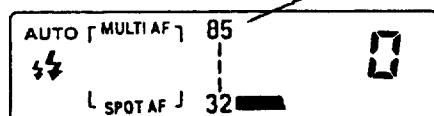
- ① the lens barrel has been returned to its RESET position after the main switch (MSW) is switched off.  
② the 3-minute timer has ended up.

Inspection command table:

NO	Command	Switch	Indication	Contents
0	Bulb permission	OFF	NO	Prohibits bulb mode.
		ON		Permits bulb mode.
1	Bulb	OFF	NO	Normal shutter release.
		ON		Bulb exposure is carried out when S2 is turned ON if bulb permission is selected.
2	Read of AE value	OFF	C. EV	C. EV and R. EV values are indicated by the AE process when S1 is turned ON.
		ON	R. EV	
3	AF step value	OFF	Step (1~30)	Indicates AF step value just before shutter release.
		ON		Indicates AF step value just before shutter release or setting step value set manually.
4	ISO value	OFF	DIN (19 ~ 36)	Reads out and indicates the present ISO value.
		ON		Reads out and indicates the present ISO value or value set manually.
5	Step zoom	OFF	Zone (1~22)	Reads out and indicates the present lens barrel zone value.
		ON		Drives the lens barrel at every zone, indicates zone value when completed.
6	READ of AF AE value	OFF	AF/AE value alternately	Prohibits indicated.
		ON		Indicates AF value and AE value alternately every 0.5 second when pre-release switch S1 ON.

Lit: switch on

Unlit: switch OFF



Operation sexecuted by each command in manual inspection mode:

- (1) Shutter bulb (command No.0,1):
  - a. Setting command No.0 and No.1 switch is ON.
  - b. When S2 is turned ON, bulb exposure is carried out.  
To close the shutter, turn S2 ON again.
- (2) AE value readout (command No.2):
  - a. When either S1 or S2 is turned ON while aiming the unit toward subject, results of the AE process (CEV, REV) are stored in RAM.  
CEV and REV are alculated by adding ISO value and exposure compensation value to the results of the metering.
  - b. AE value is indicated in CEV and REV. (Refer to Table 1.)
- (3) AF step readout (command No.3):
  - a. When either S1 or S2 is turned ON while aiming the unit toward subject, results of the AE process (AF step) are stored in RAM.
  - b. Af step value is indicated. (Refer to Table 3.)
- (4) AF step manual set (comand No.3):
  - a. The step value can be set arbitrarily by operating S1 and zoom SW.  
(command NO.3 set is ON)
- (5) DIN value readout (command No.4):
  - a. The step value can be set arbitrarily by operating S1 and zoom SW.  
(command NO.4 set is OFF)

(Refer to Table 2.)
- (6) Seting of DIN value (command No.4):
  - a. When used with exposure compensation, DIN value is limited to ISO 64 ~ ISO 3200. (command NO.4 set is ON)
  - b. The DIN value can be set arbitrarily by operating S1 and zoom SW.
- (7) Lens barrel zone readout and step zooming (commad No.5):
  - a. When zoom SW is turned ON, the lens barrel is driven outward/inward by one zone and steps. Then the present zone value is indicated.  
(command NO.5 set is OFF) (Refer to Table 4.)
- (8) Read of EV value and AF value (command No.6)
  - a. Indicates AF value and AF value alternately 0.5 second when pre-release switch S1 ON.

## REV, CEV, EV

Date	Disp.	Date	Disp.	Date	Disp.	Date	Disp.
6	60	9 3/8	93	12 6/8	2.6	16 1/8	6.1
6 1/8	61	9 4/8	94	12 7/8	2.7	16 2/8	6.2
6 2/8	62	9 5/8	95	13	3.0	16 3/8	6.3
6 3/8	63	9 6/8	96	13 1/8	3.1	16 4/8	6.4
6 4/8	64	9 7/8	97	13 2/8	3.2	16 5/8	6.5
6 5/8	65	10	.0	13 3/8	3.3	16 6/8	6.6
6 6/8	66	10 1/8	.1	13 4/8	3.4	16 7/8	6.7
6 7/8	67	10 2/8	.2	13 5/8	3.5	17	7.0
7	70	10 3/8	.3	13 6/8	3.6		
7 1/8	71	10 4/8	.4	13 7/8	3.7		
7 2/8	72	10 5/8	.5	14	4.0		
7 3/8	73	10 6/8	.6	14 1/8	4.1		
7 4/8	74	10 7/8	.7	14 2/8	4.2		
7 5/8	75	11	1.0	14 3/8	4.3		
7 6/8	76	11 1/8	1.1	14 4/8	4.4		
7 7/8	77	11 2/8	1.2	14 5/8	4.5		
8	80	11 3/8	1.3	14 6/8	4.6		
8 1/8	81	11 4/8	1.4	14 7/8	4.7		
8 2/8	82	11 5/8	1.5	15	5.0		
8 3/8	83	11 6/8	1.6	15 1/8	5.1		
8 4/8	84	11 7/8	1.7	15 2/8	5.2		
8 5/8	85	12	2.0	15 3/8	5.3		
8 6/8	86	12 1/8	2.1	15 4/8	5.4		
9 7/8	87	12 2/8	2.2	15 5/8	5.5		
9	90	12 3/8	2.3	15 6/8	5.6		
9 1/8	91	12 4/8	2.4	15 7/8	5.7		
9 2/8	92	12 5/8	2.5	16	6.0		

## DIN Value

DIN	ISO
19	64
21	100
24	200
27	400
31	1000
33	1600
36	3200

Indication metering range

W (Zone 22) : EV 6 ~ 14.75

T (Zone 1) : EV 7 ~ 17

Each Step  
and distance

Step	Distance set (m)	Switching distance (m)
1	41.3442	8.0000
2	12.0029	
3	7.0577	5.8165
4	5.0085	4.3606
5	3.8948	3.4955
6	3.1917	2.9223
7	2.7083	2.5146
8	2.3557	2.2099
9	2.0871	1.9735
10	1.8757	1.7848
11	1.7050	1.6306
12	1.5642	1.5024
13	1.4462	1.3940
14	1.3458	1.3011
15	1.2594	1.2207
16	1.1842	1.1505
17	1.1181	1.0885
18	1.0597	1.0334
19	1.0076	0.9841
20	0.9608	0.9398
21	0.9187	0.8997
22	0.8805	0.8633
23	0.8457	0.8300
24	0.8139	0.7995
25	0.7847	0.7715
26	0.7578	0.7457
27	0.7328	0.7218
28	0.7099	0.6996

## Zoom zone control

Zone	Focal length	Groups
Z01 Z02 Z03	81.6 ~ 84.2 78.5 ~ 81.4 74.7 ~ 78.2	⑤
Z04 Z05 Z06 Z07 Z08	71.7 ~ 74.5 68.7 ~ 71.5 65.7 ~ 68.5 63.1 ~ 65.4 60.6 ~ 62.8	④
Z09 Z10 Z11 Z12 Z13	57.9 ~ 60.2 55.5 ~ 57.6 53.1 ~ 55.2 50.9 ~ 52.8 48.9 ~ 50.5	③
Z14 Z15 Z16 Z17 Z18	47.0 ~ 48.6 44.9 ~ 46.6 43.1 ~ 44.6 41.3 ~ 42.8 39.4 ~ 40.9	②
Z19 Z20 Z21 Z22	37.3 ~ 39.0 35.5 ~ 37.0 34.0 ~ 35.2 33.0 ~ 33.8	①
Z23	Reset	

## LCD DISPLAY

①	②	③	④	⑤
85     32 —	85     32 —	85     32 —	85     32 —	85 —   —   — 32 —



## 展開図・部品表編

記号説明	K 1
テープ類T A設定部品一覧表	K 3
リードワイヤー一覧表	K 4
収縮チューブ一覧表	K 5
展開図の見方	K 6

## 〔1〕 展 開 図

本体部・W/Rモーター部・DX接点部	F 1
巻上げ、巻戻しギア部	F 2
本体部・SB基板部・パノラマ部・フリースプロ部	F 3
外ヘリコイド部・直進筒・シャッター部	F 4
鏡筒モーター部・固定環	F 5
ファインダー部Ⅰ	F 6
AFホルダー部・LCD	F 7
ファインダー部Ⅱ	F 8
前カバー部・バリアー部	F 9
後カバー・裏蓋部	F 10

## 〔2〕 部 品 表

部品表	P 1
部組品表	P 15

## Exploded Drawings &amp; Parts List

MARKS IN THE PARTS LIST -----	K 1
TAPES AND FILMS WITH PREFIX ALPHABETS TA -----	K 3
LEAD WIRE LIST -----	K 4
THERMAL CONSTRUCTION TUBE LIST -----	K 5
HOW TO USE EXPLSION DRAWINGS -----	K 6

## [1] Exploded Drawings

MAIN FRAME, W/R MOTOR UNIT, DX CONTACT UNIT -----	F 1
WINDING & REWINDING GEARS -----	F 2
MAIN FRAME, FLASH UNIT, PANORAMA UNIT, FREE SPROCKET -----	F 3
OUTER HELICOID, GUIDE TUBE UNIT, SHUTTER UNIT -----	F 4
MOTOR UNIT, RETAINING RING -----	F 5
FINDER UNIT I -----	F 6
AP HOLDER UNIT, LCD -----	F 7
FINDER UNIT II -----	F 8
FRONT COVER, LENS COVER -----	F 9
REAR COVER, BACK DOOR -----	F 10

## [2] Parts List

PARTS LIST -----	P 1
ASSEMBLY LIST -----	P 15

# 記号説明 MARKS IN THE PARTS LIST

## (1) 機械標準品

下の表に示す機械標準品の部品番号は品名、種類、呼び径、長さを示しています。

例 ① A 2 - 1 4 0 2 5 F A → J C I S 十字穴付き  
品名 ↑ さら小ネジ 1 種  
種類 ↑ ϕ 1.4 × 2.5 mm  
呼び径 ↑ 表(1)の部品の小数点位置  
長さ ↑

例 ② N 1 - 0 2 0 0 0 F A → 六角ナット 1 種 ϕ 2.0  
品名 ↑ 表(2)の小数点位置で長さ表示はなし  
種類 ↑ 呼び径 ↑

## (1) Standard mechanical parts

Reference Number in the Parts List

### A. Screw · Pin

A 2 - 1 4 0 2 5 F A  
Item ↑ Type ↑ Diameter ↑ Length ↑

### B. Nut · Washer · Snap ring

N 1 - 0 2 0 0 0 F A  
Item ↑ Type ↑ Diameter ↑

表 1

品 名 Item	種 類 Type	品 名 Item	種 類 Type
J C I S 十字穴付き小ねじ 1 種 Cross-point screw 1	A なべ Pan 1 さら Countersunk 2 丸さら Oval 3	すりわり付き止めねじ Splitted set screw	K 丸先 Round point 1 とがり先 Cone point 2 くぼみ先 Half point 3
J C I S 十字穴付き小ねじ 3 種 Cross-point screw 3	B なべ Pan 1 さら Countersunk 2 丸さら Oval 3	六角穴付き止めねじ Hexagon socket head set screw	L とがり先 Cone point 2 くぼみ先 Half point 3 平先 Normal 4
十字穴付き小ねじ Cross-point screw	C なべ Pan 1 さら Countersunk 2 丸さら Oval 3 トラス Trus 4	六角穴付きボルト Hexagon socket head bolt	M M2, M2.6 1, 2
十字穴付きタップタイ タイトねじ B 型 Cross-point tapped screw B	F なべ Pan 1 さら Countersunk 2	平行ピン Straight pin	P ステンレス Stainless steel 5
十字穴付きタップタイ タイトねじ B 型 1 種 Cross-point tapped screw B1	G なべ Pan 1 さら Countersunk 2 丸さら Oval 3	テーパピン Taper pin	一般用 Normal 3
十字穴付きタップタイ タイトねじ B 型 3 種 Cross-point tapped screw B3	H なべ Pan 1 さら Countersunk 2 丸さら Oval 3	スプリングピン Spring cotter	軽荷重用 Light 4

表 2

品 名 Item	種 類 Type
六角ナット Hexagon nut	K 1 種 Type 1 1 1 種 Type 3 3
平座金 Washer	R 小形丸 1 みがき丸 2
ばね座金 Spring washer	
E 型止め環 B-snap ring	S E 型 Type E 1 G 型 Type G 2 GS 型 Type GS 3

## (2) 販売区分欄 The term of sale colum

記号 Mark	説明 Explanation	
○	Can be Supplied individually	単独部品として販売するもの
△	Not supplied individually but only as subassembly.	部組品でなければ販売しないもの
○△	Supplied either as part or subassembly	単独部品でも部組品でも販売するもの
×	Not considered as repair part	修理部品と考えないもの
※	Should be sent to the factory if the repair needed.	単体では交換できないので、組む場合に工場での加工が必要なもの
☐	Delivered as a product from the sales department (i.e., not supplied as repair part)	商品として販売店で販売しているもの (修理部品扱いはしない)

## (3) 備考欄 The remarks colum

F-601M	Part number used in common	共通部品番号
(Blue × 125mm)	Lead wire (color × length)	コードの色と長さ
53P-2013 (FM-780028)	Technical information ref. number (number in parenthesis; English edition)	製品技術資料No ( )内は英文
(2.1 × 3.8 × 0.07)	Washer (internal diameter × external diameter × thickness)	ワッシャー (内径 × 外径 × 厚さ)
(Black)	Black-finished parts	黒部品
(d=0.2)	Diameter of wire	線型=0.2
(t= 1)	Thickness	厚さ=1
Rev.	Revision	訂正
Add.	Addition	追加
Dis.	Discontinuation	廃止
OLD	Parts of the intial design	旧部品
◆	Limited part	R P 限定出庫部品
RP-9001	Repair part information No.	R P 情報No.
R1... D1.... W1... C1... Q1.... P1...	Abbreviation for electronic part	電気部品記号
TA-0003	Number (TA-****) are order numbers of adhesive tape. (For the order of adhesive tape, the number 1K***-*** is not use).	接着テープ要求部番 (1K***-*** では部品要求できません。)
W-0056BE	Number (W-0056BE) are order numbers of Lead wire. (For the order of Lead wire, the number 1K***-*** is not use).	リードワイヤ要求部番 (1S***-*** では部品要求できません。)

\* VERSATILE PART

\* 既出部品

Apart maked with this pentagonal symblo is used commonly in the arcitecture of other products. That is called "VERSATILE PART". Note that every part, bearing new part number of eleven places, will turn into a VERSATILE PART when it is used in the design of future product.

テープ類TA設定部品一覧表

TAPES AND FILMS WITH PREFIX ALPHABETS TA Dec. 17, 1991

部 品 No. Part No.	名 称 Name of part	色 Color	厚さ Thickness (t=mm)	幅 Widths (mm)	長さ Length (m)	要求単位 Q'ty for a unit for ordering
TA-0001	ポリエステルフィルム Tape	透明 Transparent	0.025	10	30	1 巻 1 roll
TA-0002	ポリエステルフィルム Tape	透明 Transparent	0.025	20	30	1 巻 1 roll
TA-0003	両面接着テープ Both sided adhesive tape	白 White	0.16	10	2	1 巻 1 roll
TA-0004	両面接着テープ Both sided adhesive tape	黒 Black	0.14	12	50	1 巻 1 roll
TA-0005	ポリエステルフィルム Tape	黄 Yellow	0.06	19	66	1 巻 1 roll
TA-0006S	アセテートクロス (シート) Tape (200x120/sheet)	黒 Black	0.23	6	200 (mm)	1set (20pcs)
TA-0007	銅箔導電性 Tape, copper foil	銅箔 Copper foil	0.11	4	6	1 巻 1 roll
TA-0008	ポリエステルフィルム Tape	透明 Transparent	0.055	30	30	1 巻 1 roll
TA-0009	カプトンフィルム Tape	琥珀 Amber	0.07	6	30	1 巻 1 roll
TA-0010	両面接着テープ Both sided adhesive tape	乳白色 Opal	0.16	15	36	1 巻 1 roll
TA-0011	ポリエステルフィルム Tape	黒 Black	0.06	10	30	1 巻 1 roll
TA-0012	ポリエステルフィルム Tape	透明 Transparent	0.025	6	30	1 巻 1 roll
TA-0013	アセテートクロス (シート) Tape (200x120/sheet)	黒 Black	0.23	20	200 (mm)	1set (20pcs)

リードワイヤー一覧表

LEAD WIRE LIST

DEC. 17, 1991

部 品 No. Part No.	色 Color	外 形 Diameter (outer tube)	導体サイズ Pcs. Diameter (lead wire)	部 品 No. Part No.	色 Color	外 形 Diameter (outer tube)	導体サイズ Pcs. Diameter (lead wire)
W-0045BN	Brown	0.45mm	7×0.05mm	W-0108BK	Black	1.08mm	7×0.16mm
W-0045RE	Red	-ditto-	-ditto-	W-0108BN	Brown	-ditto-	-ditto-
W-0045OR	Orange	-ditto-	-ditto-	W-0108RE	Red	-ditto-	-ditto-
W-0045GN	Green	-ditto-	-ditto-	W-0108OR	Orange	-ditto-	-ditto-
W-0045BE	Blue	-ditto-	-ditto-	W-0108YE	Yellow	-ditto-	-ditto-
W-0045PU	Purple	-ditto-	-ditto-	W-0108GN	Green	-ditto-	-ditto-
				W-0108BE	Blue	-ditto-	-ditto-
W-0056BK	Black	0.56mm	7×0.08mm	W-0108PU	Purple	-ditto-	-ditto-
W-0056BN	Brown	-ditto-	-ditto-	W-0108GY	Gray	-ditto-	-ditto-
W-0056RE	Red	-ditto-	-ditto-	W-0108WH	White	-ditto-	-ditto-
W-0056OR	Orange	-ditto-	-ditto-				
W-0056YE	Yellow	-ditto-	-ditto-	W-0120BK	Black	1.2 mm	7×0.18mm
W-0056GN	Green	-ditto-	-ditto-	W-0120BN	Brown	-ditto-	-ditto-
W-0056BE	Blue	-ditto-	-ditto-	W-0120RE	Red	-ditto-	-ditto-
W-0056PU	Purple	-ditto-	-ditto-	W-0120OR	Orange	-ditto-	-ditto-
W-0056GY	Gray	-ditto-	-ditto-	W-0120YE	Yellow	-ditto-	-ditto-
W-0056WH	White	-ditto-	-ditto-	W-0120GN	Green	-ditto-	-ditto-
W-0056PK	Pink	-ditto-	-ditto-	W-0120BE	Blue	-ditto-	-ditto-
				W-0120PU	Purple	-ditto-	-ditto-
				W-0120GY	Gray	-ditto-	-ditto-
				W-0120WH	White	-ditto-	-ditto-
W-0080BK	Black	0.80mm	7×0.12mm				
W-0080BN	Brown	-ditto-	-ditto-	W-0150BK	Black	1.5 mm	40×0.08mm
W-0080RE	Red	-ditto-	-ditto-	W-0150BN	Brown	-ditto-	-ditto-
W-0080OR	Orange	-ditto-	-ditto-	W-0150RE	Red	-ditto-	-ditto-
W-0080YE	Yellow	-ditto-	-ditto-	W-0150OR	Orange	-ditto-	-ditto-
W-0080GN	Green	-ditto-	-ditto-	W-0150YE	Yellow	-ditto-	-ditto-
W-0080BE	Blue	-ditto-	-ditto-	W-0150GN	Green	-ditto-	-ditto-
W-0080PU	Purple	-ditto-	-ditto-	W-0150BE	Blue	-ditto-	-ditto-
W-0080GY	Gray	-ditto-	-ditto-	W-0150PU	Purple	-ditto-	-ditto-
W-0080WH	White	-ditto-	-ditto-	W-0150GY	Gray	-ditto-	-ditto-
W-0080LB	Light blue	-ditto-	-ditto-	W-0150WH	White	-ditto-	-ditto-
1 roll = 20m							

### 収縮チューブ一覧表

### Thermal construction tube list

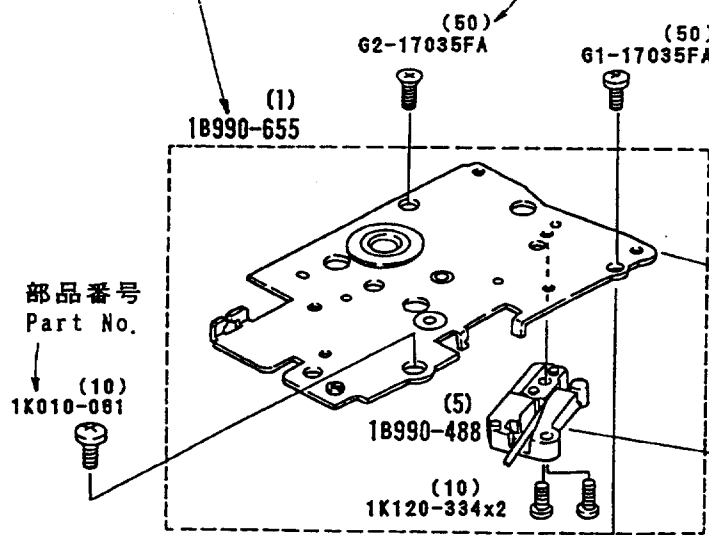
Dec. 17, 1991

[illegible]

# 展開図の見方    How to use explosion drawings

部組品 No.  
Assembly No. (component parts shown  
inside the broken line)

部品要求単位  
Quantity per order



項目 Part Classification	販売区分 Term of Supply	記号 Mark
破線外で部番の入っているもの Part with Part No., shown outside the broken line	単部品で要求できるもの Available as individual part	○
破線外で部番のないもの Part without Part No., shown outside the broken line	修理部品と考えないもの Not available as repair part	×
破線内で部番のないもの Part without Part No., shown inside the broken line.	部組品でなければ要求できないもの Available only as assembly.	△
破線内で部番の入っているもの Part with Part No., shown inside the broken line	単部品でも部組品でも要求できるもの Available as assembly or individually	○△



MAIN FRAME, W/R MOTOR UNIT, DX CONTACT UNIT

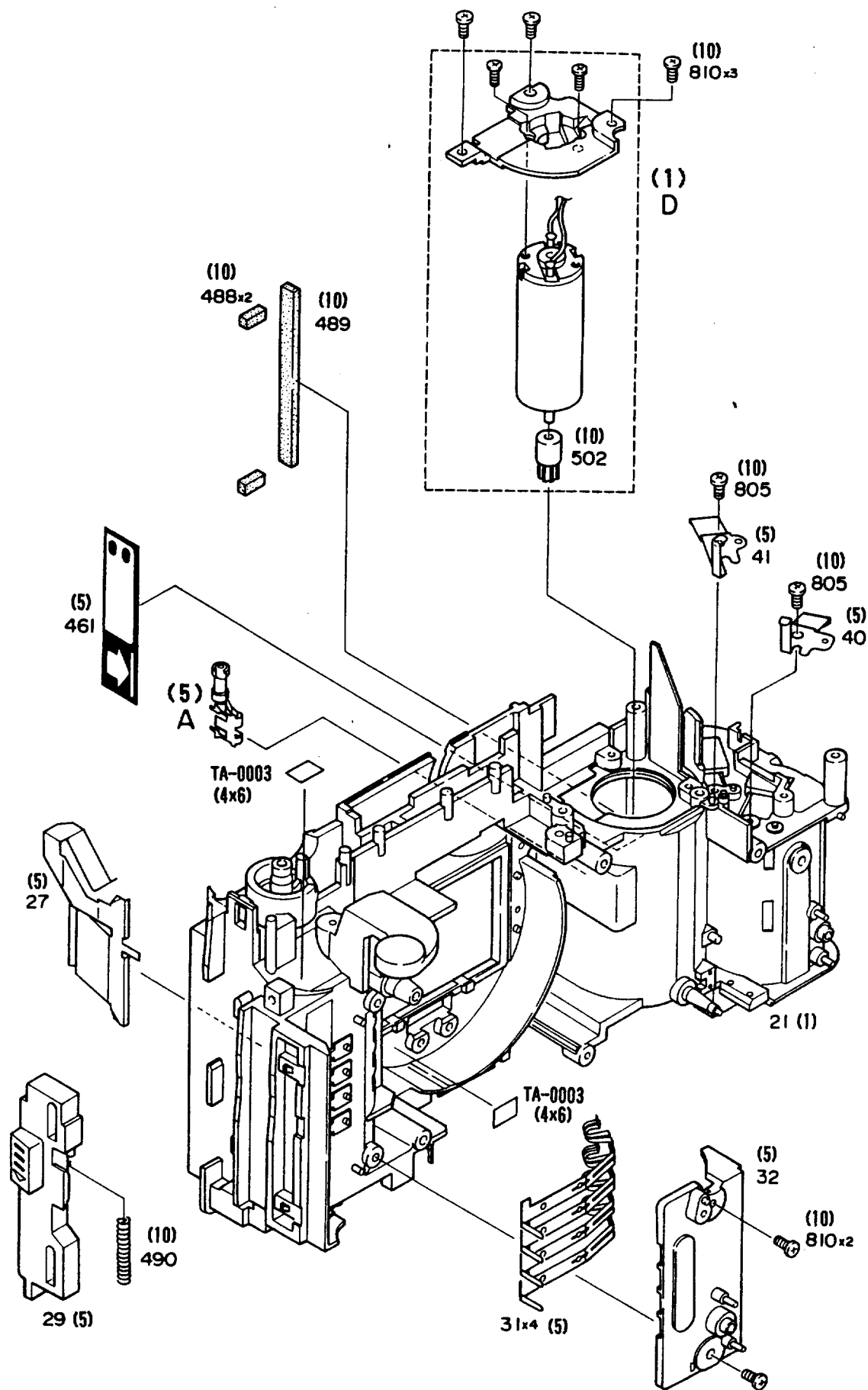
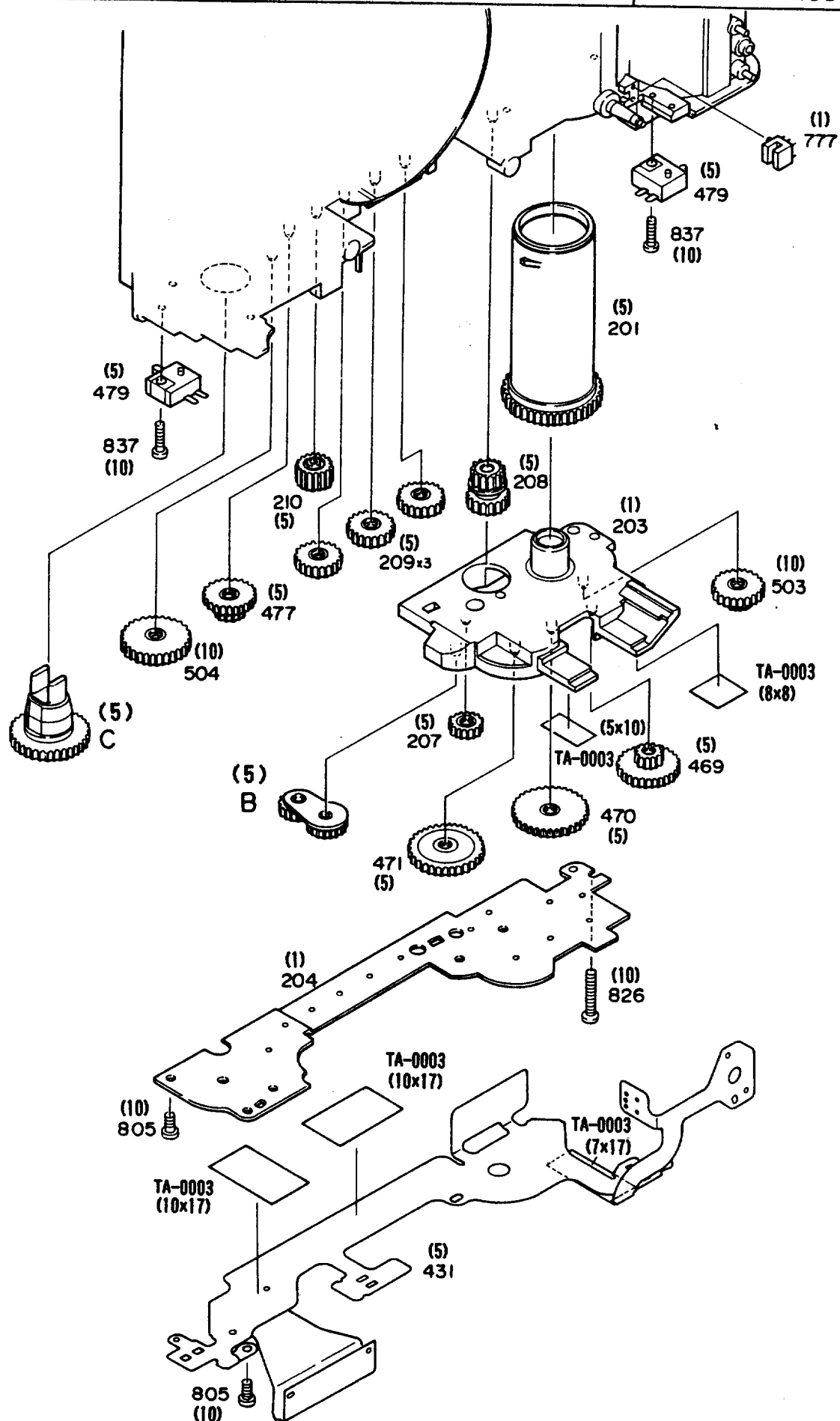


Fig. 1



**Fig. 2**

MAIN FRAME, FLASH UNIT, PANORAMA UNIT, FREE SPROCKET

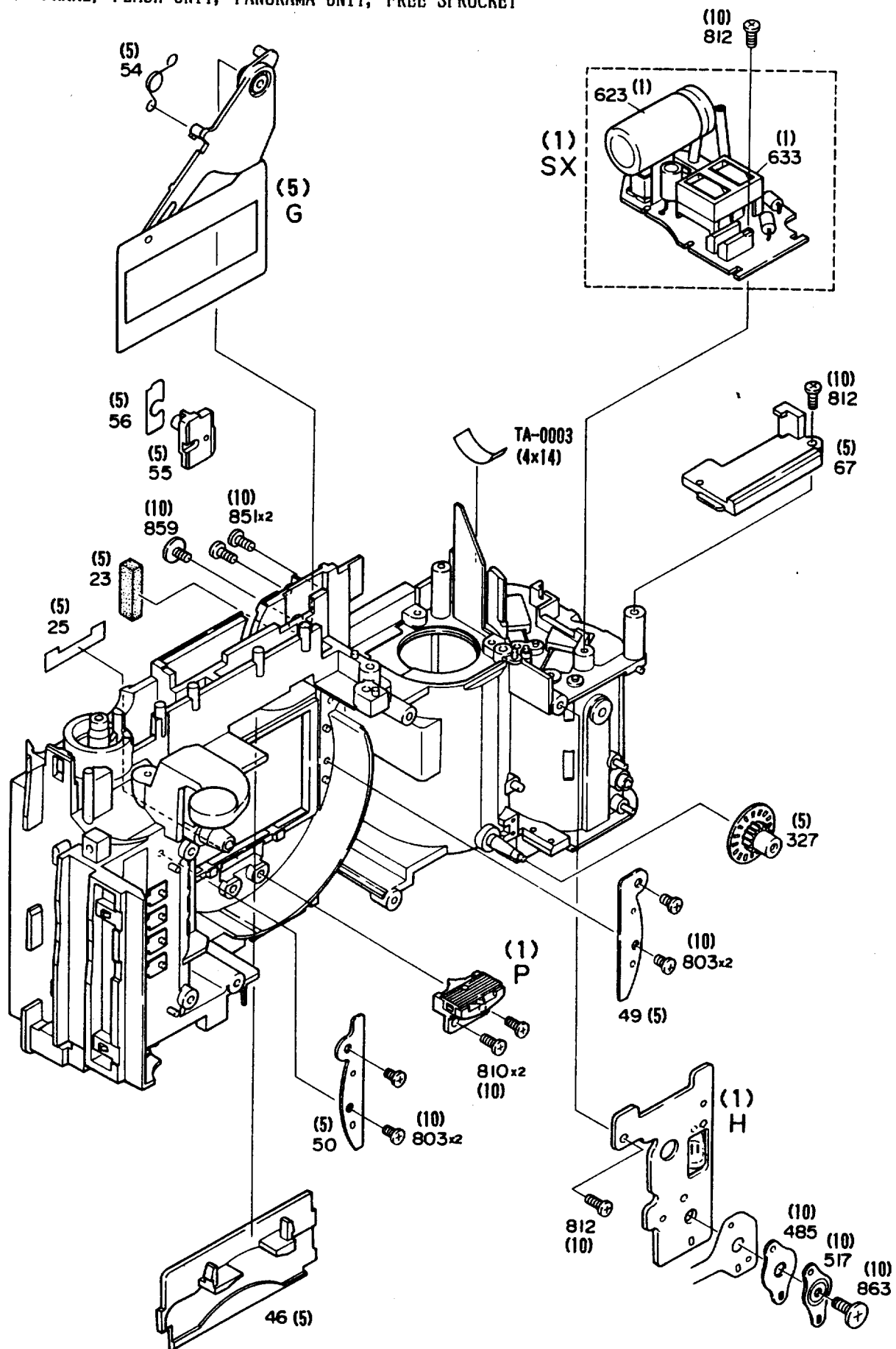


Fig. 3

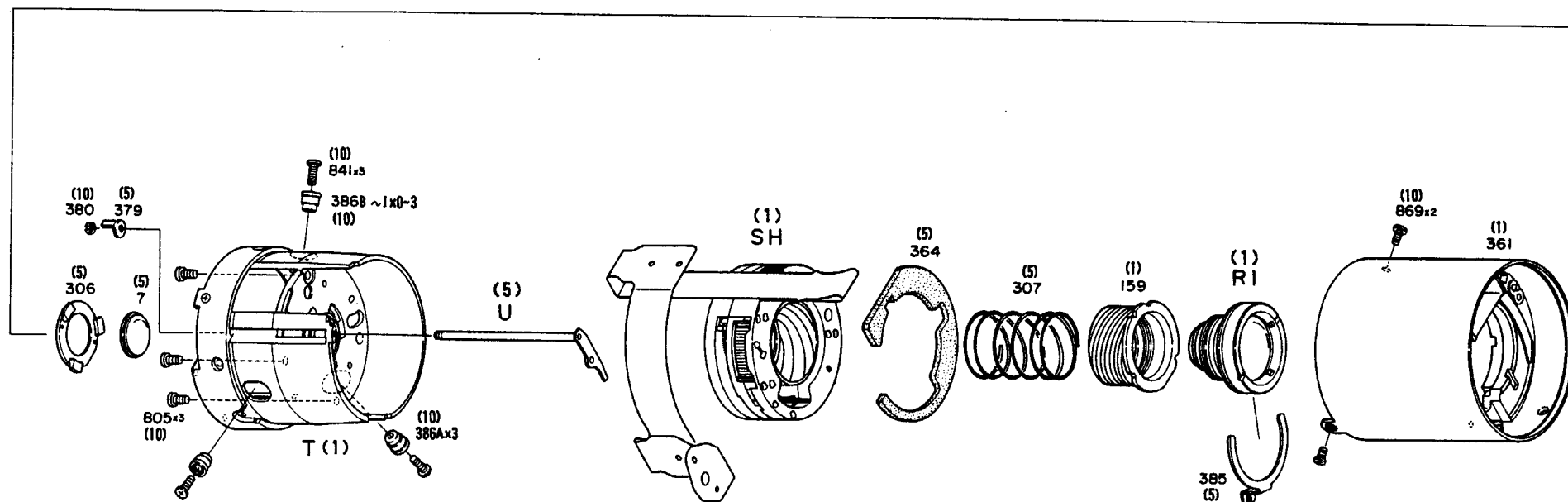
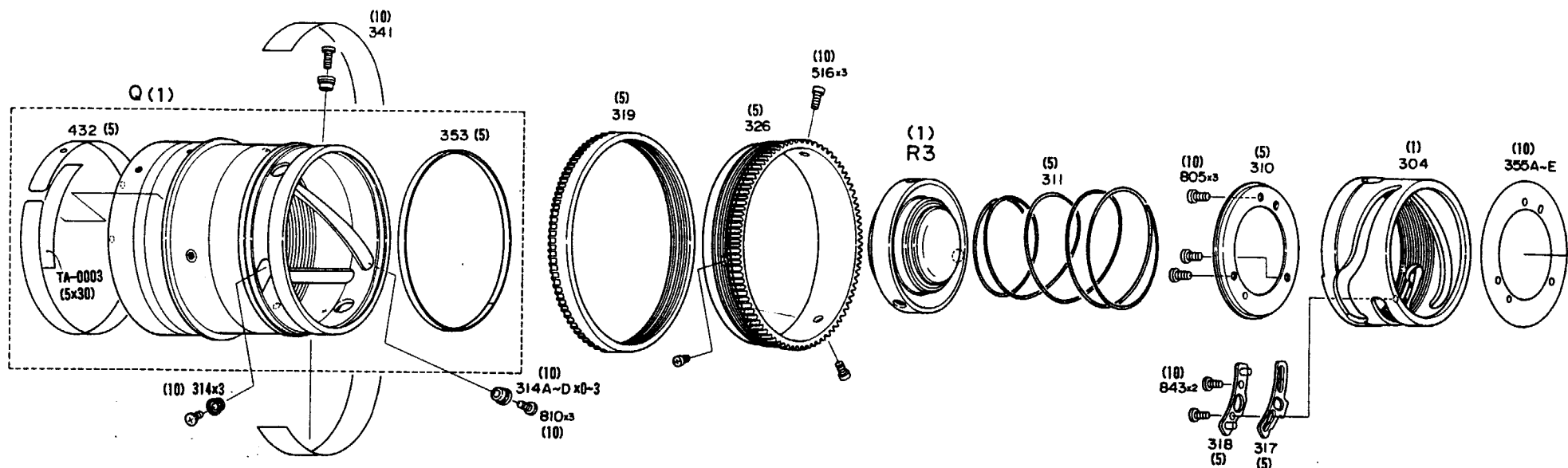


Fig. 4

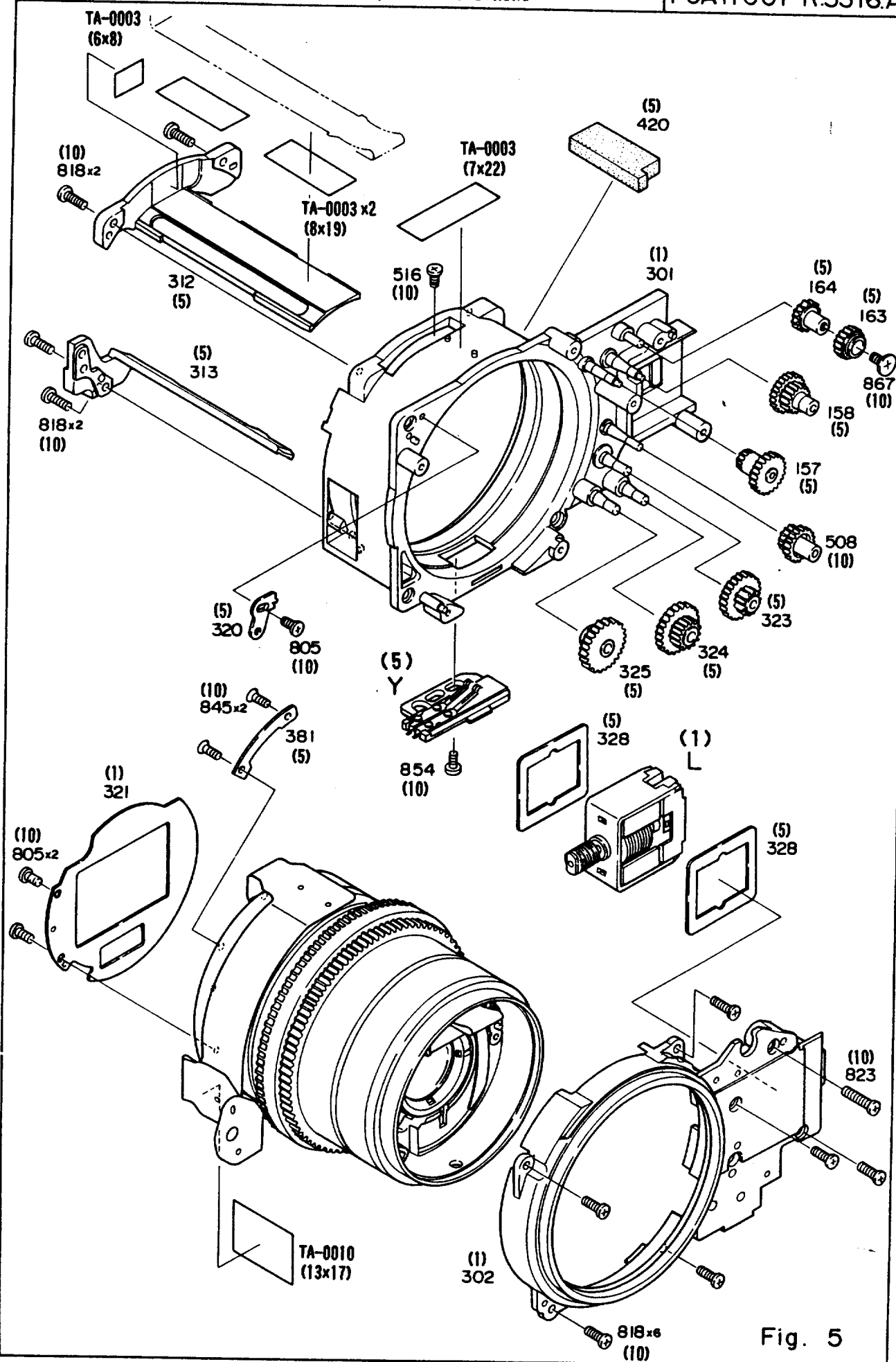


Fig. 5

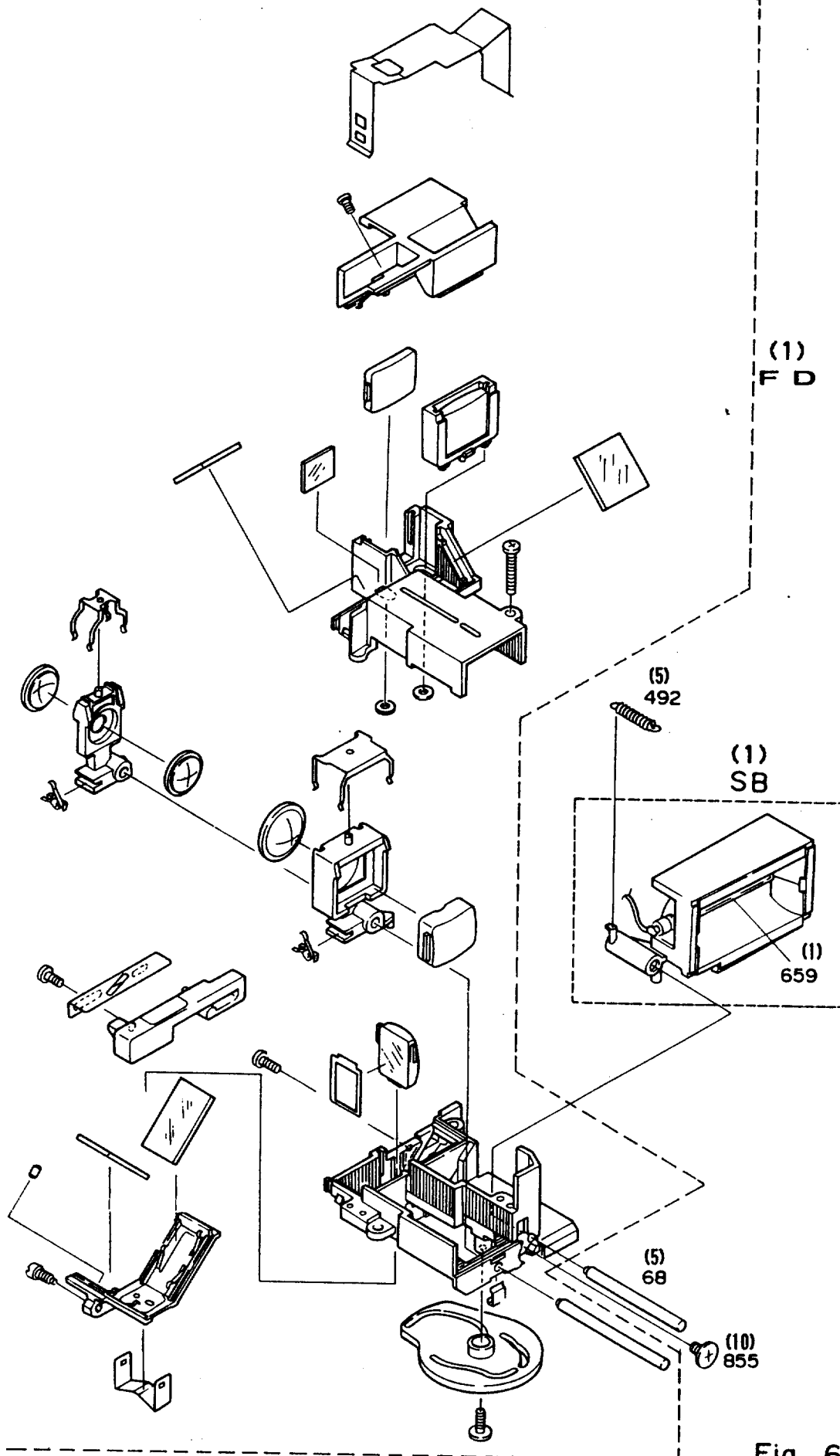


Fig. 6

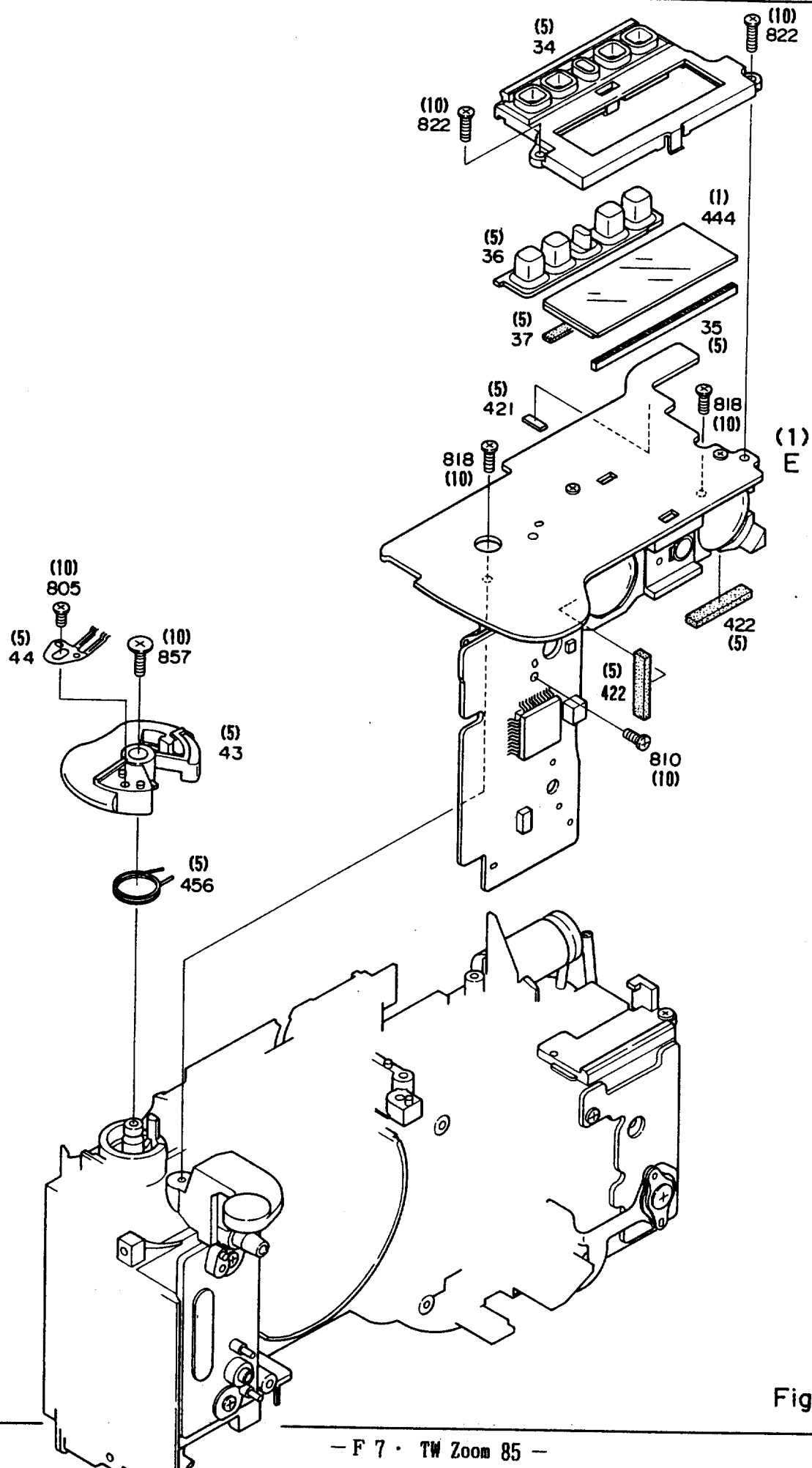


Fig. 7

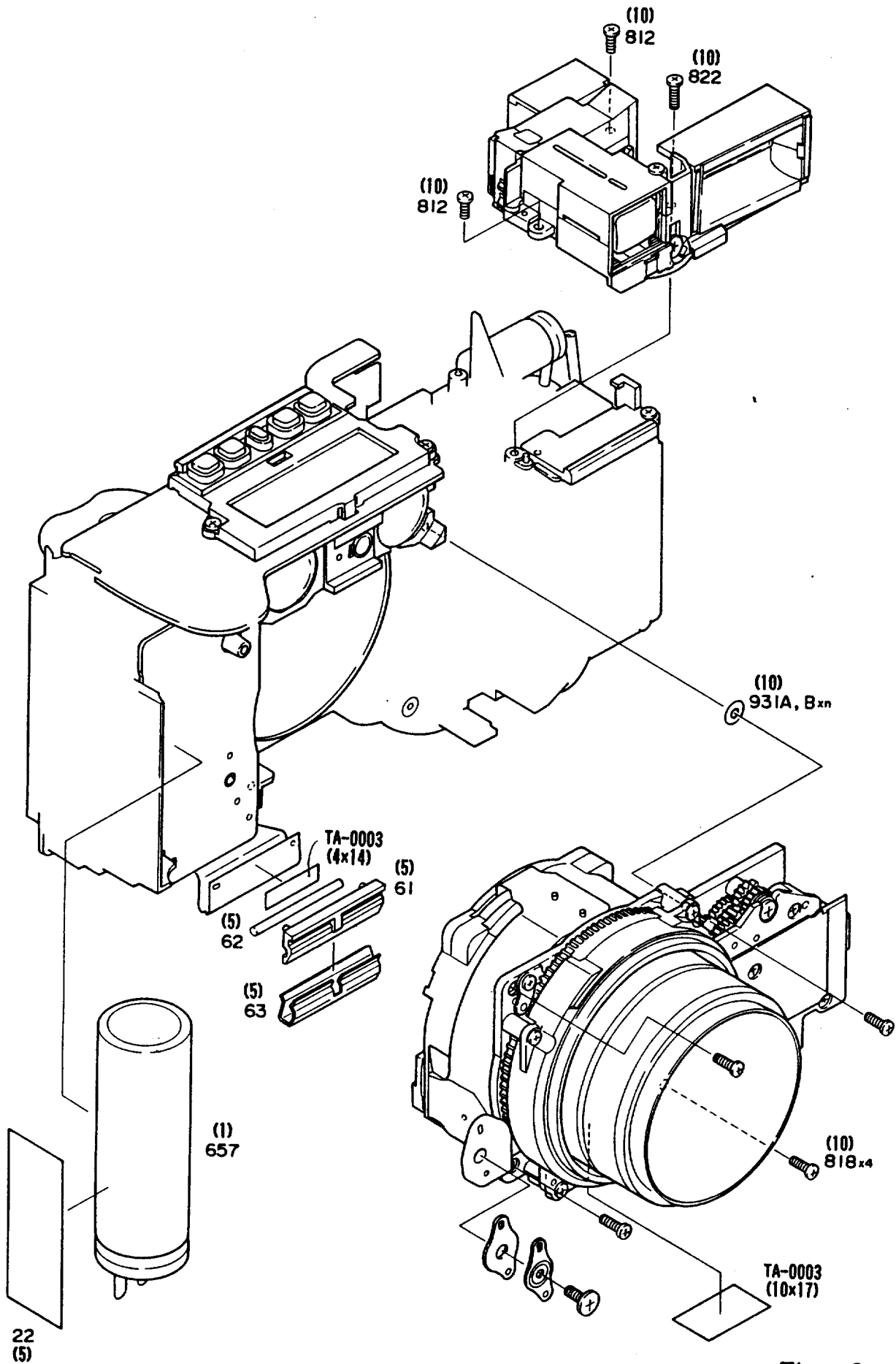


Fig. 8



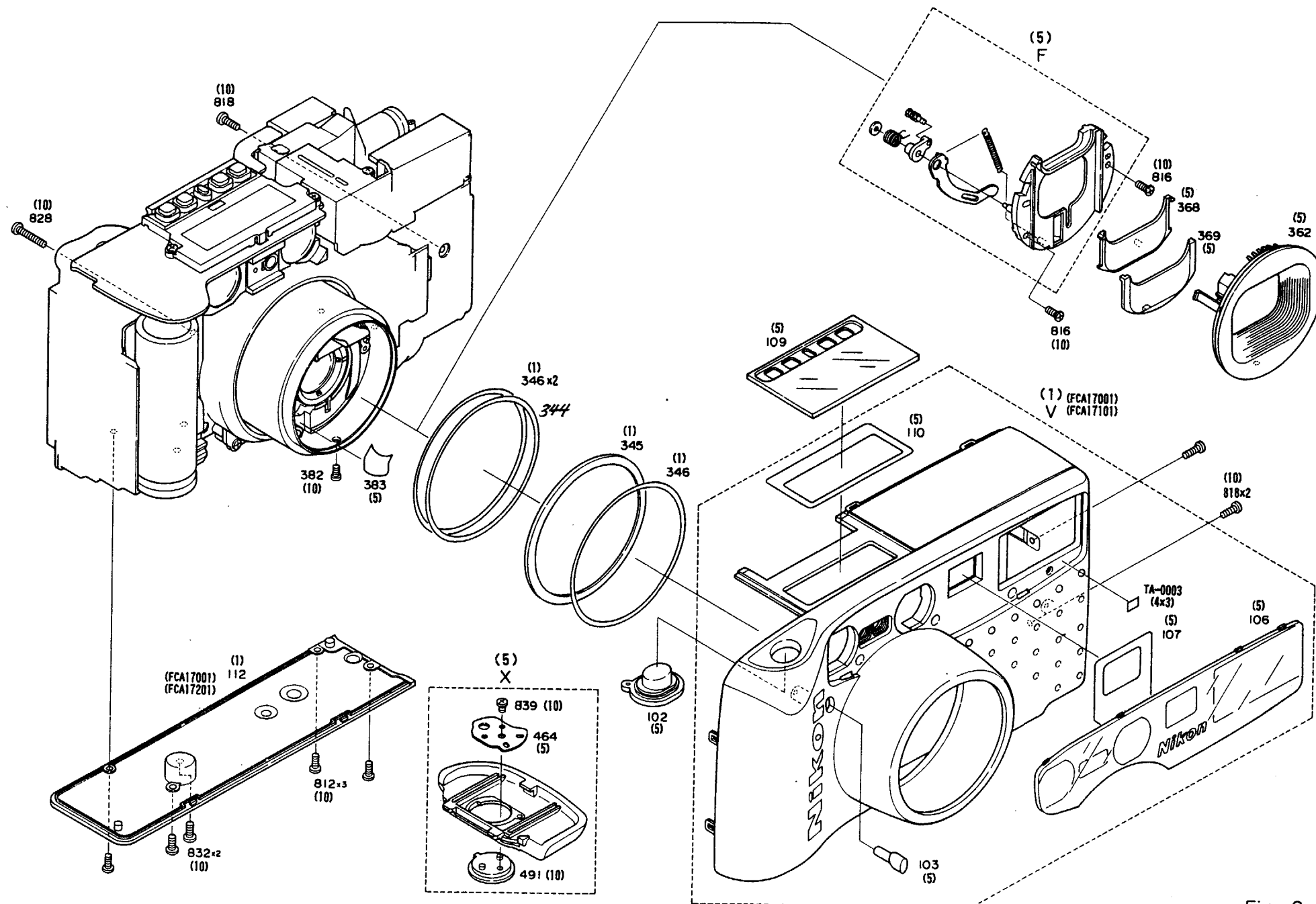


Fig. 9

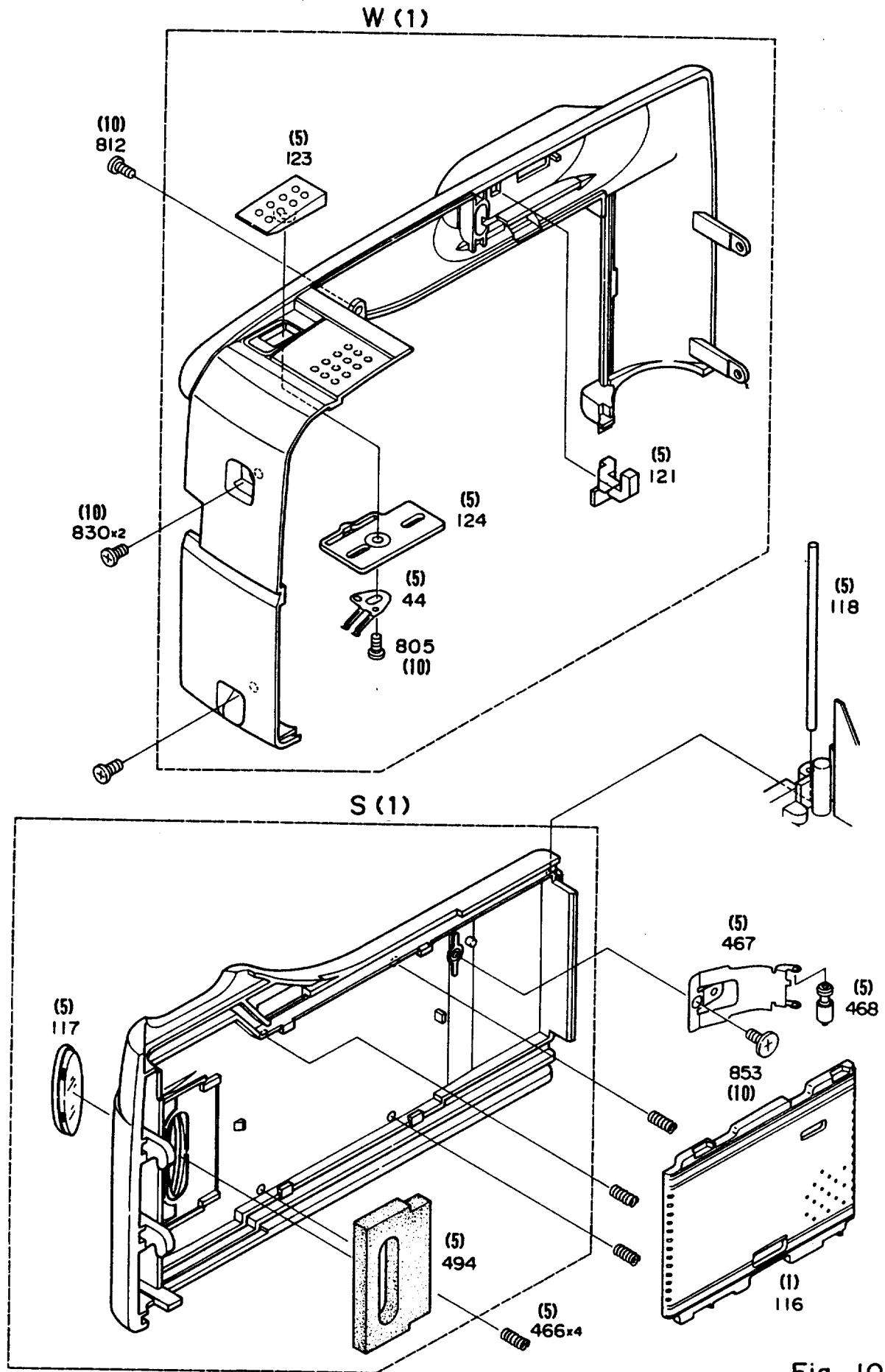


Fig. 10

## 部品表 Parts List

FCA17001-R.3316.A

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Q'ty Per Unit	部組品番号 Assembly	参照 図番 Fig. No.	販売区分 Class. of Salabil- ity	備 考 Remarks	要求単位 Order Unit Q'ty
7 (PCA17001-7)		G 7 67	1		4	○		5
2 1 (PCA17001-21)		本体 Body die-casting	1		1	○		1
2 2 (PCA17001-22)		メインコン接着テープ Tape	1		8	○		5
2 3 (PCA17001-23)		遮光モルト Sponge	1		3	○		5
2 5 (PCA17001-25)		スプロ SWカバー Free sprocket SW cover	1		3	○		5
2 7 (PCA17001-27)		パトロネ押さえ Patorone retainer	1		1	○		5
2 9 (PCA17001-29)		裏蓋開閉モールド Lock key	1		1	○		5
3 1 (PCA17001-31)		DX接片 DX contact	4		1	○		5
3 2 (PCA17001-32)		DXカバー DX contact cover	1		1	○		5
3 4 (PCA17001-34)		LCDカバー LCD cover	1		7	○		5
3 5 (PCA17001-35)		エラスティックコネクター Elastic connector	1		7	○		5
3 6 (PCA17001-36)		モードボタン Mode button	1		7	○		5
3 7 (PCA17001-37)		LCDモルト Sponge	1		7	○		5
4 0 (PCA17001-40)		電池接片 (-) Battery contact (-)	1		1	○		5
4 1 (PCA17001-41)		電池接片 (+) Battery contact (+)	1		1	○		5

## 部品表 Parts List

FCA17001-R. 3316. A

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Q'ty Per Unit	部組品番号 Assembly	参照 図番 Fig. No.	販売区分 Class. of Salabil- ity	備 考 Remarks	要求単位 Order Unit Q'ty
4 3 (FCA17001-43)		ズームレバー Zoom lever	1		7	○		5
4 4 (FCA17001-44)		ズームレバー接片 Zoom lever contact	2	W	7.10	○△		5
4 6 (FCA17001-46)		パノラマフェンス Panorama fence	1		3	○		5
4 9 (FCA17001-49)		パノラマ枠押さえ1 Panorama frame retainer 1	1		3	○		5
5 0 (FCA17001-50)		パノラマ枠押さえ2 Panorama frame retainer 2	1		3	○		5
5 4 (FCA17001-54)		パノラマレバーバネ Panorama lever spring	1		3	○		5
5 5 (FCA17001-55)		パノラマ切替え板 Panorama changing plate	1		3	○		5
5 6 (FCA17001-56)		パノラマシール Panorama seal	1		3	○		5
6 1 (FCA17001-61)		圧接モールド Press-contact mold	1		8	○		5
6 2 (FCA17001-62)		圧接ゴム Press-contact rubber	1		8	○		5
6 3 (FCA17001-63)		圧接バネ Press-contact spring	1		8	○		5
6 7 (FCA17001-67)		SBガイド Speed light guide	1		3	○		5
6 8 (FCA17001-68)		ガイド軸 Speed light guide shaft	1		6	○		5
1 0 2 (FCA17001-102)		リリース釦 Release button	1		9	○		5
1 0 3 (FCA17001-103)		セルフ窓 Self-timer window	1	V	9	○△		5

部品表 Parts List

FCA17001-R. 3316. A

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Q'ty Per Unit	部組品番号 Assembly	参照 図番 Fig. No.	販売区分 Class. of Salabil- ity	備 考 Remarks	要求単位 Order Unit Q'ty
106 (PCA17001-106)		A E. A F窓 AE, AF window	1	V	9	○△		5
107 (PCA17001-107)		A E. A F窓テープ Tape, AE, AF window	1	V	9	○△		5
109 (PCA17001-109)		L C D窓 LCD window	1		9	○		5
110 (PCA17001-110)		L C D窓テープ Tape, LCD window	1	V	9	○△		5
112 (PCA17001-112)		底カバー Bottom cover	1		9	○	NO. 5001001~	1
116 (PCA17001-116)		圧板 Pressure plate	1		10 11	○		1
117 (PCA17001-117)		パトロネ窓 Patorone window	1	S	10	○△		5
118 (PCA17001-118)		裏蓋軸 Back door shaft	1		10	○		5
121 (PCA17001-121)		L E D窓 LED window	1	W	10	○△		5
123 (PCA17001-123)		メインSWレバー Main SW lever	1	W	10	○△		5
124 (PCA17001-124)		メインSW座 Main SW base plate	1	W	10	○△		5
157 (PCA17001-157)		Fギア1 F gear 1	1		5, 6	○		5
158 (PCA17001-158)		Fギア2 F gear 2	1		5	○		5
159 (PCA17001-159)		内ヘリコイド Inner helicoid	1		4	○		1

## 部品表 Parts List

FCA17001-R. 3316. A

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Q'ty Per Unit	部組品番号 Assembly	参照 図番 Fig. No.	販売区分 Class. of Salabil- ity	備 考 Remarks	要求単位 Order Unit Q'ty
163 (PCA17001-163)		Fギア4 F gear 4	1		4	○		5
164 (PCA17001-164)		Fギア3 F gear 3	1		4	○		5
201 (PCA17001-201)		スプール Spool	1		2	○		5
203 (PCA17001-203)		巻上基板 Winding base plate	1		2	○		1
204 (PCA17001-204)		巻戻しフォーク基板 Rewinding fork base plate	1		2	○		1
207 (PCA17001-207)		ギア11 Gear 11	1		2	○		5
208 (PCA17001-208)		ギア12-13 Gear 12-13	1		2	○		5
209 (PCA17001-209)		ギア14 Gear 14	3		2	○		5
210 (PCA17001-210)		ギア24-25 Gear 24-25	1		2	○		5
301 (PCA17001-301)		サブフレーム Sub frame	1		5	○		1
302 (PCA17001-302)		固定環 Retaining ring	1		5	○		1
304 (PCA17001-304)		3群カム環 3rd group cam ring	1		4	○		1
306 (PCA17001-306)		G7押さえ G7 retainer	1		4	○		5
307 (PCA17001-307)		1群付勢バネ Spring, 1st group	1		4	○		5
310 (PCA17001-310)		3群押さえ 3rd group retainer	1		4	○		5

## 部品表 Parts List

FCA17001-R. 3316. A

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Q'ty Per Unit	部品番号 Assembly	参照 図番 Fig. No.	販売区分 Class. of Salabil- ity	備 考 Remarks	要求単位 Order Unit Q'ty
311 (FCA17001-311)		3群パネ Spring, 3rd group	1		5	○		5
312 (FCA17001-312)		直進キー 1 Linear key 1	1		5	○		5
313 (FCA17001-313)		直進キー 2 Linear key 2	1		5	○		5
314 (FCA17001-314)		ガイド環 1      φ4.0 Guide ring 1	3 ~ 0		4	○		10
314A (FCA17001-314A)		ガイド環 1A      φ3.99 Guide ring 1A	0 ~ 3		4	○	選択使用 Optional part	10
314B (FCA17001-314B)		ガイド環 1B      φ4.01 Guide ring 1B	0 ~ 3		4	○	選択使用 Optional part	10
314C (FCA17001-314C)		ガイド環 1C      φ4.02 Guide ring 1C	0 ~ 3		4	○	選択使用 Optional part	10
314D (FCA17001-314D)		ガイド環 1D      φ4.03 Guide ring 1D	0 ~ 3		4	○	選択使用 Optional part	10
317 (FCA17001-317)		クラッチ Clutch	1		4	○		5
318 (FCA17001-318)		クラッチガイド Clutch guide	1		4	○		5
319 (FCA17001-319)		シフトリング Shift ring	1		4	○		5
320 (FCA17001-320)		シフトストッパー Shift stopper	1		5	○		5
321 (FCA17001-321)		遮光枠 Light-baffle frame	1		5	○		1
323 (FCA17001-323)		Lギア 4-5 L gear 4-5	1		5	○		5
324 (FCA17001-324)		Lギア 6-7 L gear 6-7	1		5	○		5

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## 部品表 Parts List

FCA17001-R. 3316. A

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Q'ty Per Unit	部組品番号 Assembly	参照 図番 Fig. No.	販売区分 Class. of Salabil- ity	備 考 Remarks	要求単位 Order Unit Q'ty
3 2 5 (FCA17001-325)		Ｌギア 8 L gear 8	1		4	○		5
3 2 6 (FCA17001-326)		Ｌギア 9 L gear 9	1		4	○		5
3 2 7 (FCA17001-327)		Ｌギア 10 L gear 10	1		3	○		5
3 2 8 (FCA17001-328)		緩衝モーター防振ゴム Vibration proof rubber	2		5	○		5
3 4 1 (FCA17001-341)		カムテープ cam tape	1		4	○		10
3 4 4 (FCA17001-344)		カーテン 1 curtain 1	1		9	○		1
3 4 5 (FCA17001-345)		カーテン curtain	1		9	○		1
3 4 6 (FCA17001-346)		カーテンワッシャー Washer	2		9	○		1
3 5 3 (FCA17001-353)		スエード Suede	1	Q	4	○△		5
3 5 5 A (FCA17001-355A)		3群調整ワッシャー A t=0.10 3rd group adjustment washer A	1		4	○		10
3 5 5 B (FCA17001-355B)		3群調整ワッシャー B t=0.10 3rd group adjustment washer B	1		4	○		10
3 5 5 C (FCA17001-355C)		3群調整ワッシャー C t=0.10 3rd group adjustment washer C	1		4	○		10
3 5 5 D (FCA17001-355D)		3群調整ワッシャー D t=0.10 3rd group adjustment washer D	1		4	○		10
3 5 5 E (FCA17001-355E)		3群調整ワッシャー E t=0.10 3rd group adjustment washer E	1		4	○		10

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## 部品表 Parts List

FCA17001-R. 3316. A

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1 合分 個 数 Q'ty Per Unit	部組品番号 Assembly	参照 図番 Fig. No.	販売区分 Class. of Salabil- ity	備 考 Remarks	要求単位 Order Unit Q'ty
3 6 1 (PCA17001-361)		鏡筒 Lens barrel	1		4	○		1
3 6 2 (PCA17001-362)		銘板 Name plate	1		9	○		5
3 6 4 (PCA17001-364)		遮光モルト Light-baffle sponge	1		4	○		5
3 6 8 (PCA17001-368)		バリア 1 Lens cover 1	1		9	○		5
3 6 9 (PCA17001-369)		バリア 2 Lens cover 2	1		9	○		5
3 7 9 (PCA17001-379)		連結レバー Connecting lever	1		4	○		5
3 8 0 (PCA17001-380)		ナット Nut, connecting lever	1		4	○		10
3 8 1 (PCA17001-381)		バリアカム Cam, lens cover	1		5	○		5
3 8 2 (PCA17001-382)		ネジ Screw	1		9	○		10
3 8 3 (PCA17001-383)		遮光シート Light-baffle seet	1		9	○		5
3 8 5 (PCA17001-385)		フォーカスリング Focus ring	1		4	○		5

## 部品表 Parts List

FCA17001-R. 3316. A

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Q'ty Per Unit	部組品番号 Assembly	参照 図番 Fig. No.	販売区分 Class. of Salabil- ity	備 考 Remarks	要求単位 Order Unit Q'ty
3 8 6 A (FCA17001-386A)		ガイド環 2 A C=φ4.21 D=φ3.99	3 ~ 0		4	○	選択部品 Optional part	10
3 8 6 B (FCA17001-386B)		ガイド環 2 B C=φ4.21 D=φ4.00	0 ~ 3		4	○	選択部品 Optional part	10
3 8 6 C (FCA17001-386C)		ガイド環 2 C C=φ4.21 D=φ4.01	0 ~ 3		4	○	選択部品 Optional part	10
3 8 6 D (FCA17001-386D)		ガイド環 2 D C=φ4.22 D=φ3.99	0 ~ 3		4	○	選択部品 Optional part	10
3 8 6 E (FCA17001-386E)		ガイド環 2 E C=φ4.22 D=φ4.00	0 ~ 3		4	○	選択部品 Optional part	10
3 8 6 F (FCA17001-386F)		ガイド環 2 F C=φ4.22 D=φ4.01	0 ~ 3		4	○	選択部品 Optional part	10
3 8 6 G (FCA17001-386G)		ガイド環 2 G C=φ4.23 D=φ3.99	0 ~ 3		4	○	選択部品 Optional part	10
3 8 6 H (FCA17001-386H)		ガイド環 2 H C=φ4.23 D=φ4.00	0 ~ 3		4	○	選択部品 Optional part	10
3 8 6 I (FCA17001-386I)		ガイド環 2 I C=φ4.23 D=φ4.01	0 ~ 3		4	○	選択部品 Optional part	10
4 2 0 (FCA17001-420)		鏡筒遮光用モルト Light-baffle sponge	1		5	○		5
4 2 1 (FCA17001-421)		スエード Suede	1		7	○		5
4 2 2 (FCA17001-422)		遮光モルト Light-baffle sponge	2		7	○		5
4 3 1 (FCA17001-431)		底フレキ Connecting PPC	1		2	○		5
4 3 2 (FCA17001-432)		エンコーダフレキ Encoder P.P.C	1	Q	4	○△		5
4 4 4 (FCA17001-444)		LCD LCD	1		7	○		1

## 部品表 Parts List

FCA17001-R. 3316. A

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1 合分 個 数 Q'ty Per Unit	部組品番号 Assembly	参照 図番 Fig. No.	販売区分 Class. of Salabil- ity	備 考 Remarks	要求単位 Order Unit Q'ty
4 5 6 (FCA17001-456)		ズームレバーバネ Spring, zoom lever	1		7	○		5
* 4 6 1 (FCA11001-233)		フィルム先端シール Film leader position index	1		1	○	TW20	5
4 6 4 (FCA17001-464)		電池蓋クリック Battery chamber click	1	X	9	○△		5
* 4 6 6 (FCA11001-116)		圧板バネ Pressure plate spring	4		10 11	○	TW20	5
* 4 6 7 (FCA11001-117)		Fアーム Film roller arm	1		10 11	○	TW20	5
* 4 6 8 (FCA11001-118)		Fローラ Film roller	1		10 11	○	TW20	5
* 4 6 9 (FCA11001-205)		ギア4-5 Gear 4-5	1		2	○	TW20	5
* 4 7 0 (FCA11001-206)		ギア6-7 Gear 6-7	1		2	○	TW20	5
* 4 7 1 (FCA11001-207)		ギア8 Gear 8	1		2	○	TW20	5
* 4 7 7 (FCA11001-217)		ギア26-27 Gear 26-27	1		2	○	TW20	5
* 4 7 9 (FCA11001-241)		ユニットSW Unit SW	2		2	○	TW20	5
4 8 5 (FCA17001-485)		円圧接ゴム Press-contact rubber	2		3	○		10
* 4 8 8 (FCA12001-132)		遮光モルト Light-baffle sponge	1		1	○	TW-ZOOM 35-70	10
* 4 8 9 (FCA12001-137)		遮光モルト Light-baffle sponge	2		1	○	TW-ZOOM 35-70	10
* 4 9 0 (FCA12001-112)		裏蓋鍵バネ Lock key spring	1		1	○	TW-ZOOM 35-70	10

## 部品表 Parts List

FCA17001-R. 3316. A

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Q'ty Per Unit	部組品番号 Assembly	参照 図番 Fig. No.	販売区分 Class. of Salabil- ity	備 考 Remarks	要求単位 Order Unit Q'ty
* 491 (PCA12001-126)		ロック蓋 Lock button	1	X	9	○△	TW-ZOOM 35-70	10
* 492 (PCA12001-306)		S Bバネ Spring	1		6	○	TW-ZOOM 35-70	5
* 494 (PCA12001-110)		パトローネモルト Patrone sponge	1	S	10 11	○△	TW-ZOOM 35-70	5
* 502 (PCA12001-203)		モーターピニオン Pinion gear	1	D	1	○△	TW-ZOOM 35-70	10
* 503 (PCA12001-204)		ギア2-3 Gear 2-3	1		2	○	TW-ZOOM 35-70	10
* 504 (PCA12001-218)		ギア28 Gear 28	1		2	○	TW-ZOOM 35-70	10
* 508 (PCA12001-679)		Lギア2-3 L gear 2-3	1		5	○	TW-ZOOM 35-70	10
516 (PCA17001-516)		Screw	4		4 5	○		10
517 (PCA17001-517)		円圧接板 Press-contact plate	2		3	○		10
623 (PCA17001-623)		サブコンデンサ Sub condenser	1	SX	3	○△		1
632 (PCA17001-632)		発振トランス Transformer	1	SX	3	○△		1
633 (PCA17001-633)		トリガーコイル Trigger coil	1	SX	3	○△		1
657 (PCA17001-657)		メインコンデンサ Main condenser	1		8	○		1

## 部品表 Parts List

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Q'ty Per Unit	部組品番号 Assembly	参照 図番 Fig. No.	販売区分 Class. of Salabil- ity	備 考 Remarks	要求単位 Order Unit Q'ty
659 (PCA17001-659)		Xe管 Xenon tube	1	SB	6	○△		1
777 (PCA17001-777)		フォトインタラプタ Photo interrupter	1		2	○		1
803 (PCA17001-803)		Screw	4		3	○		10
* 805 (PCA10001-619)		Screw	12	W	1.2 4.5 7.10	○△	RP2	10
* 810 (PCA11001-810)		Screw	11		1.3 4.7	○	TW20	10
* 812 (PCA10001-620)		Screw	10		3.8 9.10	○	RP2	10
* 816 (PCA11001-817)		Screw	2		9	○	TW20	10
818 (PCA17001-818)		Screw	19		5.7 9	○		10
822 (PCA17001-822)		Screw	3		7.8	○		10
823 (PCA17001-823)		Screw	1		5	○		10
* 826 (PCA11001-819)		Screw	2		2	○	TW20	10
828 (PCA17001-828)		Screw	2	FD	9	○△		10
830 (PCA17001-830)		Screw	2		10	○		10
* 832 (PCA11001-821)		Screw	2		9	○	TW20	10

部品表 Parts List

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Q'ty Per Unit	部組品番号 Assembly	参照 図番 Fig. No.	販売区分 Class. of Salabil- ity	備 考 Remarks	要求単位 Order Unit Q'ty
* 837 (PCA12001-801)		Screw	2		2	○	TW-ZOOM 35-70	10
* 839 (PCA12001-128)		Screw	1	X	9	○△	TW-ZOOM 35-70	10
841 (PCA17001-841)		Screw	3		4	○		10
843 (PCA17001-843)		Screw	2		4	○		10
845 (PCA17001-845)		Screw	2		5	○		10
851 (PCA17001-851)		Screw	2		3	○		10
853 (PCA17001-853)		Screw	1		10	○		10
* 854 (PCA12001-811)		Screw	1		5	○	TW-ZOOM 35-70	10
855 (PCA17001-855)		Screw	1		6	○		10
857 (PCA17001-857)		Screw	1		7	○		10
859 (PCA17001-859)		Screw	1		3	○		10
863 (PCA17001-863)		Screw	2		3	○		10
867 (PCA17001-867)		Screw	1		5	○		10
869 (PCA17001-869)		Screw	2		4	○		10

## 部品表 Parts List

FCA17001-R. 3316. A

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Q'ty Per Unit	部組品番号 Assembly	参照 図番 Fig. No.	販売区分 Class. of Salabil- ity	備 考 Remarks	要求単位 Order Unit Q'ty
901		両面テープ 5×10 Double-sided adhesive tape	1		2	×	TA-0003	1 roll
902		両面テープ 7×17 Double-sided adhesive tape	1		2	×	TA-0003	1 roll
903		両面テープ 10×17 Double-sided adhesive tape	3		2, 8	×	TA-0003	1 roll
905		両面テープ 8×8 Double-sided adhesive tape	1		2	×	TA-0003	1 roll
906		両面テープ 4×14 Double-sided adhesive tape	2		3, 8	×	TA-0003	1 roll
907		両面テープ 13×17 Double-sided adhesive tape	1		5	×	TA-0010	1 roll
908		両面テープ 8×19 Double-sided adhesive tape	2		5	×	TA-0003	1 roll
909		両面テープ 4×6 Double-sided adhesive tape	1		1	×	TA-0003	1 roll
910		両面テープ 7×22 Double-sided adhesive tape	1		5	×	TA-0003	1 roll
911		両面テープ 6×8 Double-sided adhesive tape	1		5	×	TA-0003	1 roll
912		両面テープ 5×30 Double-sided adhesive tape	1	Q	4	×	TA-0003	1 roll
931A (PCA17001-931A)		取付座調整ワッシャー t=0.03 Adjustment washer	0~4		8	○		10
931B (PCA17001-931B)		取付座調整ワッシャー t=0.05 Adjustment washer	0~4		8	○		10

## 部品表 Parts List

FCA17001-R. 3316. A

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Q'ty Per Unit	部組品番号 Assembly	参照 図番 Fig. No.	販売区分 Class. of Salabil- ity	備 考 Remarks	要求単位 Order Unit Q'ty
1111		Lead wire (Purple) 155 mm	1	L		×	W-0080PU	1 roll
1112		Lead wire (Blue) 170 mm	1	L		×	W-0080BB	1 roll
1114		Lead wire (Brown) 120 mm	1	P		×	W-0056BN	1 roll
1115		Lead wire (Green) 140 mm	1	P		×	W-0056GN	1 roll
1117		Lead wire (Green) 195 mm	1	D		×	W-0080GN	1 roll
1118		Lead wire (Yellow) 195 mm	1	D		×	W-0080YE	1 roll
1120		Lead wire (Yellow) 60 mm	1	SB		×	W-0108YE	1 roll
1121		Lead wire (Black) 80 mm	1	SB		×	W-0108BK	1 roll
1122		Lead wire (Red) 65 mm	1	SB		×	W-0108RB	1 roll
1124		Lead wire (White) 185 mm	1			×	W-0108WH	1 roll
1125		Lead wire (Orange) 185 mm	1			×	W-0108OR	1 roll
1127		Lead wire (Black) 30 mm	1	SX		×	W-0108BK	1 roll
1128		Lead wire (Red) 20 mm	1	SX		×	W-0108RE	1 roll
1130		Lead wire (Black) 205 mm	1			×	W-0108BK	1 roll
1131		Lead wire (Red) 210 mm	1			×	W-0108RE	1 roll




## 部組品表 Assembly List

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部組番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Q'ty Per Unit	大部組品番号 Main assembly No.	参照 図番 Fig. No.	備 考 Remarks	要求単位 Order Unit Q'ty
A (PCA11001-A)		フィルム押さえ部組 Body side film roller unit	1		1	TW20	5
B (PCA17001-B)		遊星ギア部組 Planetary gear unit	1		2		5
C (PCA17001-C)		巻き戻しフォーク部組 Rewinding fork unit	1		2		5
D (PCA17001-D)		W/Rモーター部組 W/R motor unit	1		1		1
E (PCA17001-E)		A Fホルダー部組 AF holder unit	1		7		1
F (PCA17001-F)		バリア押さえ部組 Lens cover retainer	1		9		5
FD (PCA17001-PD)		ファインダー部組 Finder unit	1		6		1
G (PCA17001-G)		パノラマレバー部組 Panorama lever unit	1		3		5
H (PCA17001-H)		アンプ基板部組 Amp. base plate	1		3		1
L (PCA17001-L)		鏡筒モーター部組 Helicoid motor unit	1		5		1
P (PCA17001-P)		スプロSW部組 Free sprocket SW unit	1		3		1
Q (PCA17001-Q)		外ヘリコイド部組 Outer helicoid unit	1		4		1
R 1 (PCA17001-R1)		1群レンズ室部組 1st lens group unit	1		4		1
R 3 (PCA17001-R3)		3群レンズ室部組 3rd lens group unit	1		4		1

## 部組品表 Assembly List

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部組番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Q'ty Per Unit	大部組品番号 Main assembly No.	参照 図番 Fig. No.	備 考 Remarks	要求単位 Order Unit Q'ty
S (FCA17001-S)		裏蓋部組 Back door unit	1		10		1
S B (FCA17001-SB)		発光部 Speed light unit	1		6		1
S X (FCA17001-SX)		スピードライト基板部組 Speed light base plate	1		3		1
S H (FCA17001-SH)		シャッター部組 Shutter unit	1		4		1
T (FCA17001-T)		直達筒部組 Guide tube unit	1		4		1
<i>DIS</i> U (FCA17001-U)		バリア軸 A=45° Lens cover shaft	1		4	<i>DIS</i>	5
U 1 (FCA17001-U1)		バリア軸 1 A=43° Lens cover shaft	1		4	選択部品 Optional part	5
U 2 (FCA17001-U2)		バリア軸 2 A=41° Lens cover shaft	1		4	選択部品 Optional part	5
<i>DIS</i> U 3 (FCA17001-U3)		バリア軸 3 A=39° Lens cover shaft	1		4	選択部品 Optional part <i>DIS</i>	5
V (FCA17001-V)		前カバー部組 Front cover unit	1		9		1
V (U) (FCA17101-V(U))		前カバー部組 Front cover unit (TOUCH 600)	1		9		1
W (FCA17001-W)		後カバー部組 Rear cover unit	1		10		1
X (FCA17001-X)		電池蓋部組 Battery chamber lid	1		9		5
Y (FCA17001-Y)		リセット SW Reset SW	1		5		5

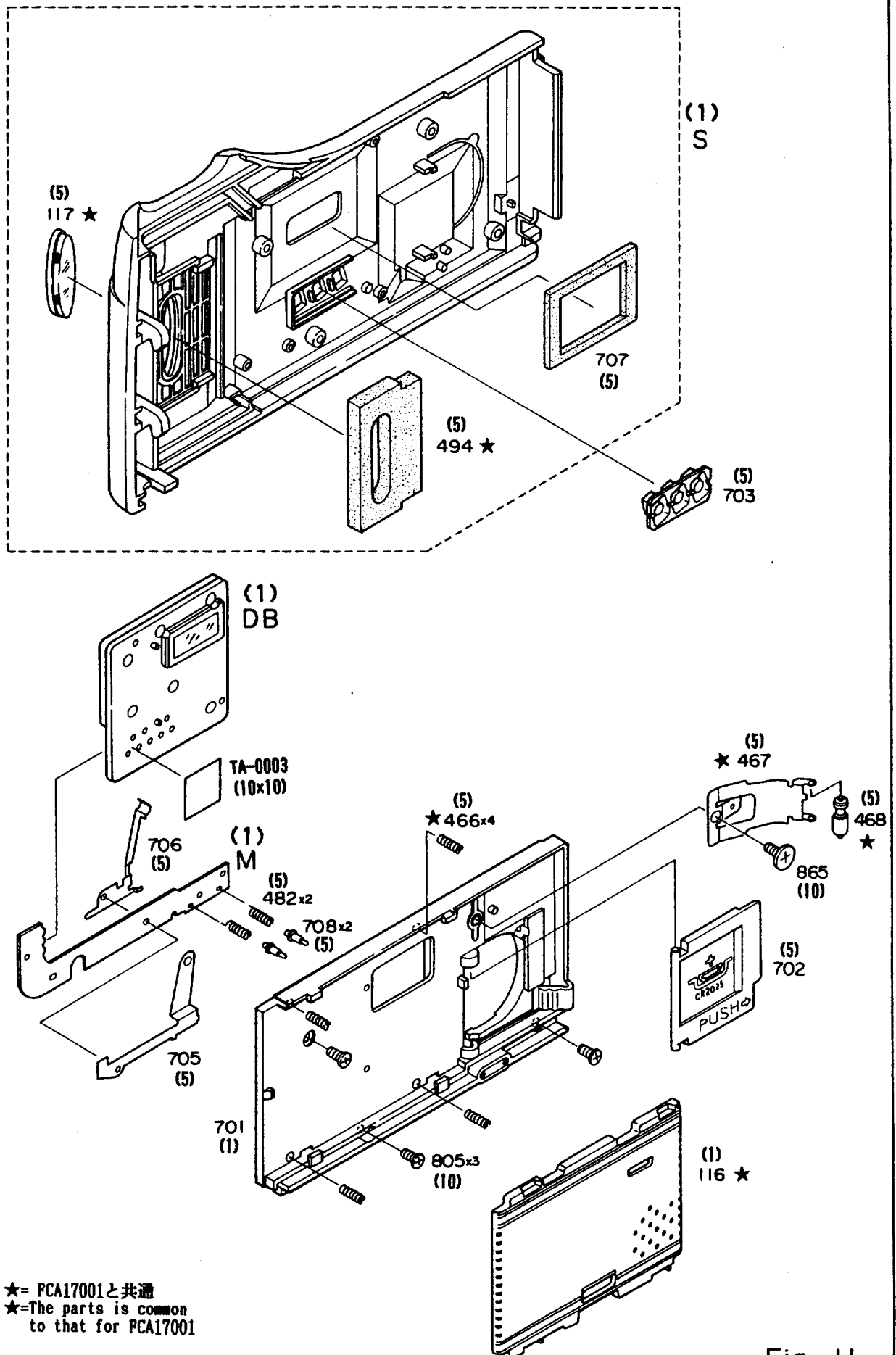


Fig. 11

## 部品表 Parts List

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Q'ty Per Unit	部組品番号 Assembly	参照 図番 Fig. No.	販売区分 Class. of Salabil- ity	備 考 Remarks	要求単位 Order Unit Q'ty
112 (FCA17201-112)		底カバー (QD用) Bottom cover (QD)	2		9	○	NO 4001001~	1
482 (FCA17201-482)		Dセッテンバネ Spring	2		11	○		5
701 (FCA17201-701)		内蓋 Inner cover	1		11	○		1
702 (FCA17201-702)		DB電池蓋 DB Battery chamber	1		11	○		5
703 (FCA17201-703)		ファンクションSW Function SW	1		11	○		5
705 (FCA17201-705)		電池接片 (-) Battery contact (-)	1		11	○		5
706 (FCA17201-706)		電池接片 (+) Battery contact (+)	1		11	○		5
707 (FCA17201-707)		Dモルト Light-baffle sponge	1	S	11	○△		5
708 (FCA17201-708)		DB接点 DB contact	2		11	○		5
* 805 (PCA11001-619)		Screw	3		11	○	TW20	10
865 (FCA17201-865)		Screw	1		11	○		10
904		両面テープ 10×10 Double-sided adhesive tape	1		11	×	TA-0003	1 roll

部組品表 Assembly List

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